

This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

#### Usage guidelines

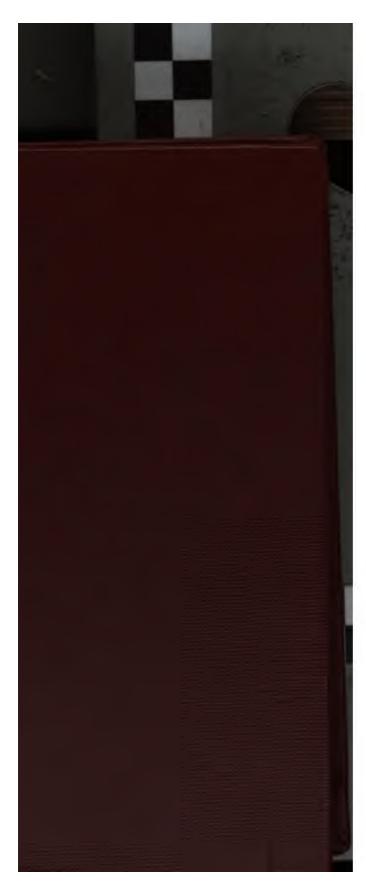
Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + Refrain from automated querying Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

#### **About Google Book Search**

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at http://books.google.com/



# Econ 7948.86

# HARVARD COLLEGE LIBRARY



FROM THE
Subscription Fund
BEGUN IN 1858









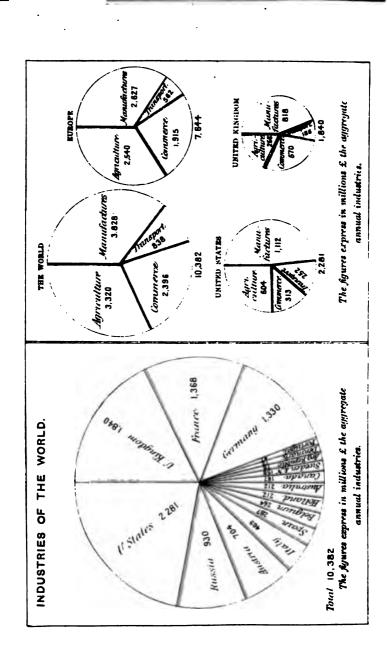
MULHALL'S
DICTIONARY OF STATISTICS.

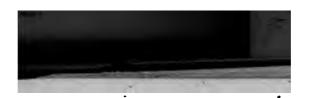


Ballantyne Press

Ballantyne, Hanson and Co. '
EDINBURGH AND LONDON







# • MULHALL'S DICTIONARY OF STATISTICS

# MICHAEL G. MULHALL

POLLOW OF THE STATISTICAL SOCIETY AND OF THE SOCIETY OF ARTS; HOSPORARY NUMBER OF THE SOUTTIME GROGRAPHICAL SOCIETY; AUTHOR OF

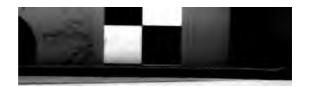
"THE PROGRESS OF THE WORLD," "THE BALANCE-SMEET OF THE WORLD,"
"MISTORY OF PRICES," &C. &C.

"Je n'impose rien, je ne propose même rien : j'expose."
Dunoyer.

NEW EDITION, REVISED AND CORRECTED

J LONDON
GEORGE ROUTLEDGE AND SONS
BROADWAY, LUDGATE HILL
NEW YORK: 9 LAFAYETTE PLACE
1886

[All rights reserved.]



VI.5779.2 Econ 7998.86

· 28 1890

Suverillion fund.

# PREFACE TO SECOND EDITION.

In availing myself of this occasion to express how much I am indebted to the Secretary of the Interior, Washington; the Director of Statistics at Boston (Mr. Carroll Wright); Mr. Edward Atkinson, Boston; the Department of Agriculture, Washington; M. Leroy-Beaulieu; M. Emile de Laveleye; Mr. Danson, Mr. Sargant, Dr. Longstaffe, Rev. P. H. Newnham, Devonport; Mr. George Farren, Carnarvon; and others, for valuable advice, correction, or publications,—it affords me much pleasure to invite all persons who feel an interest in statistical science to point out errors, suggest amendments, or place at my disposal information that may be useful. This country being the birthplace of economic science, it is not sufficient that my Dictionary of Statistics be the first and only one ever compiled; I hope also in the lapse of years to increase its size and utility.

MICHAEL G. MULHALL.

19 Albion Street, Hyde Park, London, February 2, 1886.



#### Opinions on the Author's Works.

- "This admirable Dictionary."—Emile de Laveleye.
- "The quintessence of Statistics."—Leroy-Beaulieu.
- "We want an edition in French."-Yves Guyot.
- "His statistics are most reliable."—Baron Malortie.
- "The result of laborious and skilled research."—Contemporary Review.
- "His figures are remarkably correct."—Report by U.S. Sec. of State.
- "Display a vast amount of research."-Times.
- "An inexhaustible treasury of facts."- Economiste Français.
- "This very wonderful work stands alone."—Boston Beacon.
- "He is unrivalled in the arrangement of statistics."-Academy.
- "As trustworthy as it is unique."—Scotsman.
- "No book of reference has higher claims."- Globe.
- "A vast number of facts within small compass."— Daily News.
- "An edition in German would be useful."-Tech. Blatt, Berlin.
- "The model of a statistical work."-Mark Lane Gazette.



# ORDER OF DIAGRAMS.

Expounds.		From	Nopiosa.	THOOME .	•	To face page	244
Acesouleum	<b>.</b>	To face	page 6	TRON AND	COAL	**	258
MRMT		99	22	'MONEY .		,,	320
BANKING .		,.	82	RAILWATS		**	880
CATTLE		**	76	SHIPPING.		**	406
CONNERCE .		,,	100	STEAM-POW	ER .	,,	424
DEST .		**	134	'TAXATION		**	436
Horam .		,,	286	WRALTH .		,,	470



# SIGNS.

See Appendix.

? Doubtful.

# DICTIONARY OF STATISTICS.

#### A

**ABBEYS.**—Those confiscated in England by Henry VIII. were 608, with a gross income of £141,000, equal to the rent of 720,000 acres of land.

**ABLE-BODIED.**—The proportion of men capable of bearing arms in various countries is as follows:—

Per Cent. of Popu- lation.			0	er Cent. ( Popu- ation.	Per Cent. of Popu- lation.		
England		23	Germany		24	Denmark 25	
Scotland		22	Italy .		25	Sweden 25	
Ireland		$2\cdot 2$	Belgium		25	Norway 24	
France		27	Holland		25	United States 23	
Austria		25	Spain .		26	Greece 23	

ACCIDENTAL DEATHS. — There are 20,400 persons killed by accident yearly in the United Kingdom, being almost 3 per cent. of all deaths. The ratio in the various countries is as follows:—

Per 1,000 Deaths.	Per 1,000 De iths.	Per 1,00) Deaths.
England 30	Germany 16	Belgium 17
Scotland 31	Russia 6	Denmark 12
Ireland 18	Austria 10	Sweden 26
United King-	Italy 5	Norway 33
dom 28	Switzerland . 28	United States 39
France 15	Spain 7	

In England the ratio is rising very rapidly, viz.:—

Year.	Accidental Deaths.	Rate per 1.000 Deaths.
1860	9,225	22
1870	10,906	21
1878	16,176	30

In 20 years ending 1870, females were 26 per cent. of the victims.

ACCUMULATION.—The increase of wealth in the United Kingdom in ten years ending 1880 was 1540 millions—that is over £400,000 a day, or about threepence per inhabitant. It appears in the following items:—

		Value in I	dillions, &
		1870.	1880.
Houses .		1,620	2,240
Railways .		530	780
Shipping .		66	120
Bullion .		118	143
Land, cattle, &c.		2,400	2,400
Foreign investmen	uts	920	1,110
Furniture, &c., &c		1,226	1,667
		6,880	8,410

See Wealth, Income, Capital.

#### AEROLITES.

Date.	Locality.	Weight (lbs.)	Remarks,
1748	Yenisey	1,600	•••
1783	Gran Chaco	82,000	Near Tucuman.
1784	Bendego, Brazil	17,000	•••
1793	Graf Reinet	800	South Africa.
1803	Normandy	1 1	2000 red-hot stones.
1812	Prague	1 1	200 hot stones.
1829	Bohnmelitz	103	Bohemia.
1866	Kuyahinza	670	With 1000 smaller.
1870	Greenland	49,000	Now at Copenhagen.
1871	Greenland	20,000	" St. Petersburg.

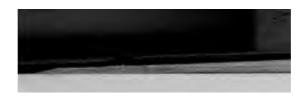
The last two were found in the years expressed, but may have fallen centuries ago. That of Gran Chaco is 95 per cent. iron. The British Museum has an aerolite weighing 5 tons.

AERONAUT.—The greatest height attained was by Mr. Glaisher in an ascent from Wolverhampton, September 5th, 1862, when he rose to a distance of seven miles. Mr. Glaisher states that in 3500 balloon ascents only 15 deaths have occurred, that is, about four per thousand. See Balloons.

AGE.—A man's working life is divided into four decades:—

20 to 30 . . . bronze | 40 to 50 . . . gold 80 , 40 . . . silver | 50 , 60 . . . iron

Intellect and judgment are strongest between 40 and 50. The percentages of population to age in various countries are shown thus:—



#### AGB.

# A.

				Panoust	an or Po	Average Age of	
G <sub>re</sub>	<del>mtry</del> .	•		Under 30 Years.	From 10 to 66.	Over 60.	Average Age of all Living. Years,
England	•	•	•	46	47	7	27:1
Scotland	•	•	•	46	45		27.4
Ireland .	•	•		46	43	11	28-6
France .		•		36	52	13	82-2
Germany				43	49	8	28-0
Daly				44	49	7	27-6
Austria.				43	50	7	27.7
Greece .			-	48	47	Š	25.5
Spain .	•	-	:	48	52	6	27-2
Brasil		•	•.	46	45	و	27-8
Belgium	•	•	• •	40	50	10	29-7
Haland	•	•	•	43	49	8	28-8
Denmark	•	•	•	49	50	8	28.4
Sweden.	•	•	•	48	49	8	28-0
Norway	•	•	•	48	48	9	28.0
United Sta	•	•	•			1 2	
United Sta	<b>Les</b>	•	•	50	45	5	24-9

# The Americans are the youngest, the French the oldest.

# B.—Ages of Nations in Aliquot Parts.

Age.	United Kingdom (1871).	France (1876).	Germany (1871).	Austria (1870).	Italy (1871).	Greece (1870).
Under 5	18-3	9.8	127	13.2	13.8	14.4
5 to 20 20 to 40	82·5 28·9	25·9 29·7	30·8 29·8	80·2 80·6	29 8 <b>3</b> 0 2	33·2 32 0
40 to 60 Over 60	17·3 8·0	22·7 11·9	19·0 7·7	19·5 6·5	19·2 7·0	14·8 5·6
	100-0	100-0	100 0	100.0	100-0	100.0

Age.	United States (1879).	Spain (1866).	Brazil (1870).	Holland (+870).	Belgium (1866).	8weden (1:70).
Under 5	14.3	14-2	10.8	11.3	12.1	12.6
5 to 20	85.4	27.8	35.3	81.4	28.4	30.1
20 to 40	80.4	84.8	80-6	809	29.4	31-2
40 to 60	14-9	17-9	14-6	18.7	20 2	18.3
Over 60	5-0	5-8	87	7.7	9-9	7.8
	100-0	100-0	100-0	100.0	100.0	100 0



AGE.

# C .- Ages in United Kingdom.

	England.		. Scotland.			Ireland.		
Age.	1841.	1871.	1851.	1871.	1841.	1891.		
Under 5 5 to 20 20 to 40 40 to 60 Over 60	13·2 82·9 80·7 16·0 7·2	13·5 82·2 29·5 17·4 7·4	12·8 33·1 30·1 16·4 7·6	13·0 83·1 28·5 16·7 8·7	15-2 86·8 29·2 14·5 4·3	11·1 84·8 26·3 17·2 10·6		
	100-0	100.0	1000	100 0	1000	100.0		

#### D.—AGES IN CITIES.

Age.	Loudon.	Paris.	Liverpool.	Man- chester.	Birming- bam.
Under 5 5 to 20 20 to 40 40 to 60 Over 60	13·0 29·7 83·4 17·7 6·2	7·1 21·5 89·8 24·2 7·4	13·4 26·8 33·7 17·4 8·7	13·5 31·2 33·0 17·1 5·2	189 827 810 168 56
	100.0	100.0	100-0	100-0	100-0

# E.—Ages of Criminal Offenders.

1	England.		France.			
		Age.	Per Cent.	Ratio per 100,000 Inhabitants.		
0.5	4	Under 20	18-0	22		
19.8	81 .	20 to 40	54.0	31		
55-2	141	40 to 60	23.0	14		
20.6	92	Over 60	5-0	5		
8-9	85					
			1000	15		
1000	80		ĺ			
	0.5 19.8 55.2 20.6 8.9	0.5 4	Per Ratioper10,000 Cent.   Iuhabitant    0.5	Per Ratio per 10,000 Cent. Iuhabitants.  0.5 4 Under 20 18.0 54.0 55.2 141 40 to 60 23.0 0ver 60 8.9 85 100.0		

The English table comprises all persons who passed through prison charged with any offence, the French only convicts of grave crimes.

AGRICULTURE.—This great branch of industry, including not only tillage, but also forestry and pasture, maintains 209 millions of people in the countries comprised under this review. It represents a capital of more than 20 milliards sterling, an annual product of about 34 milliards.

The following tables sum up the chief features:-

#### A.—AGRICULTURAL CAPITAL

		VALUE	IN MILL	IONE &.		Capital
	Land.	Timber.	Cattle.	Sun- dries.	Total.	per Inhabi- tant
United Kingdom.	1,737	50	235	238	2,260	£65
France	2,624	182	212	224	3,242	88
Germany	2,060	264	230	236	2,790	62
Russia	1,386	530	345	364	2,625	33
Austria	1,290	260	205	216	1,971	51
Italy	810	80	56	97	1,043	36
Spain	660	70	57	62	849	51
Portugal	158	10	11	26	205	46
Belgium	245	15	30	56	346	63
Holland : .	212	5	33	85	335	84
Denmark	210	4	31	28	273	137
Sweden	312	130	42	30	514	114
Norway	110	62	21	10	203	102
Greece	105	7	6	14	132	70
Europe	11,919	1,669	1,514	1,686	16,788	54
United States	1,923	180	365	480	2,948	58
Canada	180	48	35	44	307	70
Australia	182	10	66	70	328	120
Total	14,204	1,907	1,980	2,280	20,371	56

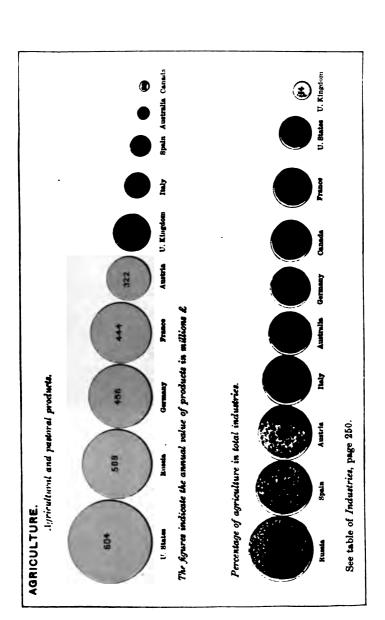
The above does not include public lands in United States or Australia.

# B.—AGRICULTURAL INCOME.

	Valu	or Pa	VALUE OF PRODUCTS IN MILLIONS A								
	Grain.	Other Crops.	Cattle- farming.	Forestry.	Total	Produc of Popul	Rara	ı i			
United Kingdom	68	58	137	8	266	£22	10	0			
France	161	164	110	9	444	25	2	0			
Germany	129	183	132	12	456	20	1	0			
Russia	266	71	145	27	509	9	2	0			
Austria	110	95	102	15	322	13	3	0			
Italy	65	76	33	4	178	10	2	0			
Spain	60	37	36	8	136	11	16	0			
Portugal	8	16	6	, 1	81	10	12	0			
Holland	7	19	19	ˈ	45	21	4	0			
Belgium	14	17	13	1	45	19	7	0			
Denmark	15	8	14		87	24	5	0			
Sweden	16	11	14	11	52	17	6	0			
Norway	3	4	7	. 5	19	12	10	0			
Greece	2	5	2	1	10	10	7	0			
Roumania	37	12	16	2	67	16	8	0			
Europe	961	776	786	94	2,617	15	2	6			
United States .	207	139	198	60	604	24	8	0			
Canada	22	9	21	6	58	21	8	0			
Australia	13	24	89	¦	76	37	9	0			
Total	1,203	948	1,044	160	3,355	16	3	0			

See Land, Tillage, Grain, Cattle, &c.

C.—Agricultu	RE	OF	United	KINGDOM.	
Class.		Qu	antity.	Value.	
Grain, bushels .		322,	000,000	£68,200,00	)0
Other crops .				58,100,00	)0
Meat, tons .		1,	090,000	76,800,00	)0
Poultry and eggs				10,600,00	Ю
Milk, butter, cheese			•••	89,800,00	
Hides, wool, &c.	•		•••	10,200,00	)0
				£263,200,00	<del>-</del>



The increase of pasture and decline of tillage since 1870 appear as follows:—

United Kingdom—Acres.

				^
Arable	Arable		1870. 24,075,000	1881. 22,878,000
	•	•		
Pasture	•	•	22,225,000	24,768,000
Total c	ultiva	sted	46,300,000	47,646,000

The returns for the three kingdoms in 1881 were as follows:—

	England.	·Scotland.	Ireland.	United Kingdom.
Wheat	2,738,000	75,000	154,000	2,967,000
Barley	2,181,000	271,000	211,000	2,663,000
Oats	1,883,000	1,031,000	1,392,000	4,306,000
Beans, &c	671,000	28,000	20,000	719,000
Grain Crops	7,473,000	1,405,000	1,777,000	10,655,000
Potatoes	400,000	189,000	854,000	1,443,000
Turnips	1,555,000	491,000	295,000	2,341,000
Vetches, &c	875,000	24,000	120,000	1,019,000
Fallow, &c	3,772,000	1,482,000	2,166,000	7,420,000
Arable	14,075,000	3,591,000	5,212,000	22,878,000
	13,504,000	1,172,000	10,092,000	24,768,000
Total	27,579,000	4,763,000	15,304,000	47,646,000

The margin of profit over expenditure even in fair years is only four shillings per acre, viz.:—

	ent.		Po	r Acı	re.	Amount, Millions &.	
Rent		•		£1	4	0	58
Labour		•		2	5	0	108
Team				1	0	0	48
Taxes				0	7	0	17
Seed				0	10	0	11
Manure				0	10	0	11
Profit				0	4	0	10
v	alue	of pi	roduct	8			. 263

In the above table seed and manure are counted only for the arable area.

# AGRICULTURE.

D	-Ag	RICU	LTU	RE OF UNITED	STATES.
				Acres,	Value of Crop.
Grain .		•		119,100,000	£207,000,000
Cotton				13,600,000	67,000,000
Potatoes				1,900,000	10,500,000
Hay .				24,000,000	54,000,000
Tobacco, &	æ.	•	•	685,000	7,600,000
Tillage				159,285,000	£346,100,000
Meat .				8,460,000 tons.	102,000,000
Butter and	che	888		610,000	45,500,000
Milk .				•••	27,500,000
Hides, woo	ol, &c	٠.		•••	23,200,000
	<b>.</b>				05.44.000.000

Total of agricultural products £544,300,000

# E.—THIRTY YEARS OF UNITED STATES AGRICULTURE.

STATES.	F	ARMS, T	ACRES, MILLIONS.						
	1850.	1860.	1870.	1880.	1850.	1860. 1970.		1550.	
N. England.	167	185	182	207	18	20	21	22	
Middle	351	413	456	539	43	47	49	53	
Southern	488	640	849	1,481	165	220	185	227	
Western	441	776	1,131	1,707	63	109	141	209	
Pacific	8	30	40	68	4	11	14	23	
Total	1,450	2,044	2,658	4,002	293	407	410	534	

STATES.	GRA	IN, MIL	LION BU	SRELS.	VALUE OF FARMS, MILLIONS &.					
1850.		1860.	1870.	1880.	1850.	1860.	1870.	1880.		
N. England	20	21	16	18	78	99	122	121		
Middle	170	204	216	233	248	378	580	505		
Southern .	360	412	301	442	198	447	291	347		
Western .	310	572	808	1,898	157	444	895	1,070		
Pacific	•••	14	34	63	2	14	85	78		
Total .	860	1,223	1,375	2,654	683	1,382	1,923	2,116		

STATES.	Busi	KLS PER	INHABI	VALUE OF FARMS PER INMAR.				
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.
N. England .	7:3	6.7	4.6	4.5	£29	£31	£85	£34
Middle	25-2	250	22.1	20.2	37	46	60	44
Southern	43.2	40.1	26.7	29-0	24	44	26	23
Western	57-0	63.0	62.1	109-0	80	49	69	61
Pacific		<b>2</b> 8·0	49-0	57-0	20	80	50	66
Total	87.0	88.7	85.2	520	£30	£44	£49	£42

#### SUMMARY.

	1	VALUE, I	MILLIONS	VALU	E PER	Inhabi	TANT.	
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.
Farms	683	1,382	1,923	2,116	£30	£44	£49	£42
Cattle	114	226	816	378	5	8	8	8
Crops	116	183	214	415	5	6	6	8
Implements .	31	51	69	103	1	2	2	2
Total	944	1,842	2,522	3,012	£41	£60	£65	£60

(The New England states are Maine, New Hampshire, Vermont, Rhode Island, Connecticut, and Massachusetts. The Middle are New York, New Jersey, Pennsylvania, Delaware, and Maryland. The Southern are Virginia, North and South Carolinas, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Arkansas, Kentucky, and Tennessee. The Western, Ohio, Illinois, Missouri, Indiana, Iowa, Michigan, Wisconsin, Nevada, Montana, Minnesota, Kansas, Nebraska, Colorado, Dakota, New Mexico. The Pacific, California, Oregon, Washington, and Utah.)

In 1879 the agricultural products of the several groups of States were as follows:—

States.	Value (Millions £).	Ratio per Acre.	Ratio per Inhabitant.	Ratio to Agricul tural Capital.
New England	21	£0.95	£5·2	12 per cent.
Middle	78	1.45	6.7	101,
Southern	131	0.60	8.6	26 ,,
Western	212	1.01	12.1	14 ,,
Pacific	16	0.70	14.2	15 ,,
Total	458	€0.30	£9-0	15 per cent.

The yield per acre is on the total area of farms, of which only 55 per cent. is "improved," so that the real yield per acre cultivated or improved is double the figures shown above.



# AGRICULTURE.

10

# F.-FRENCH AGRICULTURE.

			Quantity in Millions.	Value.
Grain, bushels			726	£161,000,000
Wine, gallons			720	45,000,000
Potatoes, cwts.	-		190	28,300,000
Chestnuts, ,,	-		11	1,600,000
Vegetables,	-	•	21	15,200,000
Straw, tons		•	17	21,800,000
Hay,	•	:	14	32,000,000
Cider, gallons	-		220	7,200,000
Beet-root, cwts.	•	•	160	7,500,000
Flax, oil, &c.				7,500,000
Tillage			<del></del>	£325,600,000
Meat, cwts.	-	Ĭ	18	55,000,000
Poultry and egg	*	•	•••	14.000.000
Dairy products		•	•••	31,000,000
Hides, wool, &c.	•	:	•••	10,000,000
Total .			<del></del>	£435,600,000

# G.-GERMAN AGRICULTURE.

٠.	~		IIGINICOD	201121
			Quantity in Millions.	Value,
Grain, bushel	ls .		634	£129,000,000
Wine, gallone	в.		70	4,200,000
Potatoes, ton	<b>s</b> .		21	57,500,000
Hay, ,,			26	59,400,000
Straw, ,,			16	20,000,000
Beet-root ,,			11	9,200,000
Sundries .	•		•••	83,000,000
Tillage			<del></del>	£312,300,000
Meat, cwts.			25	72,000,000
Hides, wool,	dairy,	&c.	•••	60,000,000
Total .			<del></del>	£444,300,000

# H.—RUSSIAN AGRICULTURE.

	Quantity in Millions.	Value.
Grain, bushels	1.710	£266,000,000
Potatoes, cwts	180	22,300,000
Flax and hemp, cwts.	8	13,000,000
,, seed ,,	. 14	7,000,000
Beet-root	80	8,100,000
Hay, straw, &c		26,000,000
Tillage		£337,400,000
Meat, cwts	84	82,000,000
Hides, wool, dairy, &c		63,000,000
Total	<del></del>	£482,400,000



# AGRICULTURE,

# I.—AUSTRIAN AGRICULTURE.

			Quantity in	Value.
Grain, büshels			550	£110,000,000
Potatoes, owts.			160	20,000,000
Wine, gallone			<b>3</b> 10	15,200,000
Hay, tons .			15	80,000,000
Steaw ,, .			14	14,000,000
Best-root, tons			8	6,000,000
Vegetables, &c.	•	•	***.	10,000,000
Tillege			·	£205,200,000
Meet, owts.	•	•	19	52,000,000
Hides and wool			•••	8,000,000
Dulgy, &c	•	•	•••	42,000,000
Total .				£807,200,000

				res of Tilla llions of Ac		7	alue of Cro (Millions &)	7 <b>7</b>
			Austria.	Hungary.	Total.	Austria.	Hungary.	Total.
Grain .		_	16.4	20.1	36.5	53.7	56.4	110.1
Potatoes			2.4	1.1	3.2	16-0	4.0	20.0
Wine .			0.5	0-9	1.4	5.0	10 <del>-0</del>	15-0
Beet .			07	0.4	1.1	4-0	2.0	6.0
Hay .			8-0	4-0	12.0	20-0	10-0	80.0
Straw .	•					7.0	7.0	14.0
Sundries		:	1.8	0.8	2.6	7.0	3-0	10-0
Total			29.8	27:3	57·1	112.7	92.4	205·1

# K.—Italian Agriculture.

			Quantity in Millions.	Value.
Grain, bushels			293	£65,000,000
Wine, gallons			580	29,800,000
Olive oil "			81	6,100,000
Chestnuts, cwts.			12	4,800,000
Rice "			14	7,000,000
Fruit, &c	•	•	•••	28,600,000
Tillage			<del></del>	£141,800,000
Mest, cwts.			5	16,000,000
Hides and wool			•••	8,000,000
Dairy, &c.	•	•	•••	14,000,000
Total .				£174,800,000

#### 12

# AGRICULTURE.

# L.-AGRICULTURE IN SPAIN AND PORTUGAL

	Quai	itity in Mil	lions.	Value in Millions &.			
	Spain.	Portugal.	Total.	Spain.	Portugal.	Total	
Grain, bushels .	295	30	325	60	8	68	
Wine, gallons .	320	80	400	19	10	29	
Oil, , .	15	5	20	3	1	4	
Fruit, &c				15	5	20	
Tillage				97	24	121	
Meat, cwts	6	1	7	16	3	19	
Sundries				20	3	23	
Total				133	30	163	

# M.—Agriculture in Belgium and Holland.

	Quant	tity (Millio	u <b>s).</b>	Value (Millions £).		
	Belgium.	Holland.	Total.	Belgium.	Holland.	Total.
Grain, bushels	68	37	105	14	7	21
Potatoes, cwts.	34	22	56	5	3	8
Hay, ,,	13	40	53	2	6	8
Sundries				10	10	20
Tillage				31	26	57
Meat, cwts	2	2	4	8	8	16
Dairy, &c			•••	5	11	16
Total		i		44	45	89

# N.—Agriculture in Scandinavia.

	1 '	Total Value			
	Denmark.	Sweden.	Norway.	Total.	(Millious £)
Grain, bushels .	75	80	15	170	84
Potatoes, cwts	5	20	10	85	5
Hay, tons	8	8	1	7	14
Sundries		•••		•••	4
Tillage					57
Meat, cwta	2	8	1	6	19
Dairy, &c		•••	•••		16
Total					92

O .- AGRICULTURE IN CANADA.

0.	2201620	CHICIM IN	CAMADA	
		Quantity in Millions.	Value (Millions £).	Value per Inhabitant,
Grain, bushels		130	22	£50
		4		
Meat, cwts.		2	10	2.3
Dairy products		•••	9	2.1
Sundries .		•••	11	2.2
Total		•••	52	£11·9
P.—	Austr.	ALIAN AGR	ICULTURE.	
		Quantity in	Value	Value per
		Millions.	(Millions &).	Inhabitant.
Grain, bushels		60	` 13 ´	£4·4
Wool, lbs		390	20	7.4
Meat, tallow, &			16	6.0
Dain products	٠	•••	6	2.2
Dairy products		•••	_	
Potatoes, cwts.		8	2	0.7
Hay, wine, fruit	, &c	•••	19	70
Total		•••	76	£27.7
A ===		•• •		
AIR.—In its pur	e state	it is comp	osed thus:	
Nitrogen .				77
Oxygen .				21
Other comp	onents			2
		-		
				100
The percentage of	f oxyge	en varies a	s follows:-	<del></del>
Locality.	Percen		Locality.	Percentage.
Sea-shore	. 21			. 20.50
Confined houses .		75 Who	n candles go	
Confined houses .	. 20.	19   WHE	in camones Ro	out . 10 50
The following tab	le show	s how oxy	ge <mark>n varie</mark> s w	ith climate-
Ben Lomond . 20.940				20.956
Atlantic 20.942	, MEGLIC	1 20	949 Geneva	20 956
Lyons 20.942	Berlin	20	953 Andes	20.963
Air travels in E	ngland	in health	v vears ab	out 41 miles
an hour, and 31 in	unhoo	thy The	Normantag	o of corponia
an nour, and 34 in	unnea	uny. The	percentag	e of carbonic
acid ranges thus :-				
In country .	03	, T	form	. •07
			fogs	
"town	04		crowded lan	
"hospitals .	05	"	theatres .	
Each adult inhal	AG A ~	allon of a	r nor min	nte and con
LACH addit Hillan	ca a R	מווטוו טו מו	r ber mm	uve, and con-
sumes daily 30 oz.	of oxy	gen. For	the conve	rsion of this
oxygen a certain an				
owingon a certain an	1 1	1	.cquireu—	2002. 01
carbon for a male,	and I	1 Oz. for a	a iemale, (	equivalent to
3 lbs. bread and 21/2	lbs. re	spectively.		-
J .55 D. Cad and 22	10	opecurion.		

#### ALCOHOL-ALPACA.

The proper allowance of air in barracks is 600 cubic feet per man in Europe, and 1000 in India: for hospitals, 1200 cubic feet per bed in Europe, and 1800 in India. Horses require in England 1600 cubic feet each, or nearly as much as three men.

# ALCOHOL.—The degrees in wines and liquors are :-

Beer 4.0	Gooseberry . 11	8   Ratafia	21-0
Porter 4.5	Champagne . 12:	2 Madeira	21-0
Ale 7·4	Claret 13:	3 Port	23-2
Cider 8.6	Burgundy 13	6 Curacoa	27-0
Perry 8.8	Malaga 17	3 Aniseed	33-0
Elder 9.3	Lisbon 18	Maraschino .	84-0
Moselle 9.6	Canary 18	8 Chartreuse .	480
Tokay 10-2	Sherry 19.	0 Gin	51.6
Rhine 110	Vermouth 19	0 Brandy	53.4
Orange 11-2	Cape 19:	2 Rum	53.7
Bordeaux 11.5	Malmsey 19	7 Irish Whisky.	<b>53-9</b>
Hock 11.6	Marsala 20	2 Scotch	54.3

Spirits are said to be "proof" when they contain 57 per cent. The maximum amount of alcohol, says Parkes, that a man takes daily without injury to his health is that contained in 2 oz. brandy,  $\frac{1}{4}$  pint of sherry,  $\frac{1}{2}$  pint claret, or 1 pint of beer.

**ALLOY.**—In British gold one part in 12, in silver 18 in 240. The standard of purity of the moneys of all countries will be found under the title *Coins*.

ALLUVIAL DEPOSITS.—The weight of these deposits for every 1000 gallons of water is as follows:—

	lbs.		lbs.		lbs.
Loch Katrine	. 1	Danube .	 2.	Wear	. 16
Windermere	. 1	Garonne .	 2	Ganges	. 22
Severn	. 1	Rhine	 2	Cheltenham	. 184
Avon				Harrogate .	
Tunbridge .					
Spree					
Geneva				Atlantic .	

ALPACA.—This wool was first manufactured at Saltaire, near Leeds, in 1836, and the consumption in England has risen as follows (annual average):—

Years.	Cwts.	Value.
1840-45	12,900	£ 96,000
1850-55	19,200	270,000
1860-65	80,150	840,000
1875-80	84,700	390,000

14

#### AMPUTATION.

A.—Mo	RTA	LITY	IN	VARIO	US HOSPITALS:	: Per	CENT.
London				37.8	Edinburgh		43.3
Paris	•	•	•	60.0	Glasgow . English rural		36.0
Zurich	•	•	•	46.0	English rural		17.8

In such German hospitals as have adopted the Listerian method, invented by Professor Lister of Glasgow, the death rate after amputation has fallen to 4.7.

#### B.—LONDON AND RURAL COMPARED.

#### Death-Rate of Patients, Per Cent.

Tai	don.		Ru	nl.		
University	•	25.7	Tewkesbury	•		8.8
St. Bartholom	ew's	86.6	St. Leonard's			10.0
Guy's .		38.2	St. Alban's		•	14.2
St. George's		38.8	Ashford .			20.0
Whitechapel		47.3	Stockton .			25.0

# C.—NATURE OF AMPUTATION.

		Death-Rate, Per Cent.			
		English Rural. 1859-78.	Glasgow. 1850-74.	Glasgow. 1795-1833.	Guy's, 1854–61.
Arm .		8.1	34.0	48.0	20.0
Leg .		15.5	45.0	68.0	39.0
Thigh		83.3	52.0	92.0	50·0
General		17.8	36.0	51.0	38.2

#### D.—AMPUTATIONS IN WAR.

				Death-	Death-Rate, Per Cent.		
Peninsula				Arm. 12 9	Leg or Thigh.		
Waterloo	·	Ċ	·	11.6	26.8		
Crimea .				15.5	50.2		

ANCHORS.—The weight of anchors and chain cables for vessels is as follows:—

Vessel,	Anchors, tons.	Heaviest in	Cable, inches.	Cable, length in fathoms.
200	3	13	1.0	180
500	6	25	1.5	270
1000	91	42	1.9	300
2000	18	77	2.1	300

It is usual for vessels to carry 7 anchors, 4 of the maximum weight prescribed above.

# ANIMALS-ANTHROPOMETRY.

#### ANIMALS.

16

Rabbit		Weight (lbs.).	Years of Life. 5	Cow .	Weight (lbs.). 750	Years of Life. 25
Dog		10	12	Ox	900	25
Sheep		70	12	Horse .	1.000	27
Pig.	٠	160	10	Camel .	1.200	40
Lion		500	40	Elephant	6,000	100

#### ANTHROPOMETRY.

#### A .- HEIGHT IN INCHES.

<b></b>	English	American	Belgian.		
Age.	Male.	Male,	Male.	Female.	
10	51.8	51.7	50·1	49-2	
15	62.2	62.3	59-6	58 6	
20	67.5	67.4	65·8	62-0	
24	67.7	67-9	66-2	62.1	
30	67.9	68-1	66-4	62-2	
40	68.0	68.1	66· <b>4</b>	62-2	
50	67.9		66· <b>4</b>	62-2	
60	67.7		66.0	61.8	
70	67-2		65· <b>4</b>	61.3	

#### B.-Weight in LBS.

	English American	English American	Bel	gian.
Age.	Malo.	Mulo.	Male,	Female.
10	67	66	56	51
15	103	105	91	88
20	143	147	131	117
24	148	147	146	123
30	156	150	146	122

The average weight of 20,000 men and women at Boston in 1864, and of 22,000 weighed at Cincinnati in 1882, was as follows:—

There was no account taken of age.



#### ANTHROPOMETRY.

# C.—HERGET ACCORDING TO CLASS (ENGLAND).

	Inches.						
Age.	Affluent.	Artisan.	Farm Labourer.	General.			
10	52-9	50-7	50-9	51.8			
15	62-9	61.4	61.8	62.2			
20	68-3	66.5	66-9	67.5			
24	68-4	66.6	67.5	67.7			
30	68-5	66.8	67.6	67.9			
40	68-7	67.1	67.6	68-0			
50	68-1	66-6	67.8	67-9			
60	68-1	66.5	68.0	67.7			
70	68-5	66-5	69-9	69.2			

# D.-WEIGHT ACCORDING TO CLASS (ENGLAND).

•		i Lm.					
Age	Affinent.	Artisan.	Farm Labourer.	General			
10	69	64	67	67			
15	107	96	101	103			
20	146	136	144	143			
24	148	148	152	148			
30	160	149	158	156			
40	170	154	161	164			
50	172	149	166	164			
60	170	138	171	162			

In the preceding tables height is without shoes, but weight includes clothing. The Laplanders are the shortest people in Europe—males, 59; females, 57 inches. The Boston Journal of Chemistry gives the average height of adult males as follows:—

American Yankee	Indian			Inches. 67-98 67-67	Russian French				Inches. 66:39 66:28
Scotch Knolish	•	•	•	67·07	Mexican	•	•	•	66.11

#### E.—DIFFERENCE OF SEXES (EUROPE).

Height Size .			Female. 94 93		Skull . Brain . Strength			Female, 88 91
Weight	•	100	8 <del>4</del>	1	Strength	•	100	67

В

17

## F.—Danson's Table of Convict-Males.

	Height,	Inches.	Weigh	t, Lba.
Age.	1858.	1878.	1858.	1878.
18	64.3	64.1	122	125
20	65-2	65.1	133	187
22	66-2	65.7	139	142
24	65.9	65.4	142	141
26	66-2	65.6	142	148
28	66.7	65.7	143	144
80	66.4	65.5	142	144

# G.—CHEST AND STRENGTH (ENGLAND).

Age.	Chest, Inches.	Drawing Strength, Lbs.	Age.	Chest, Inches.	Drawing Strength, Lbs.
10	26.0	35	80	36 0	80
15	29 · 5	48	40	36 · 2	77
20	84 ·8	78	50	86.5	75
24	<b>35</b> ·8	78	60	•••	70

# H.—CHEST MEASUREMENT OF BRITISH ARMY.

Over 40 is	ache	8.		•	4.3
88 to 40					20 · 4
36 to 38					41.8
35 to 36					17.8
Under 35				•	15.7
					1 AA.A

# I.—HEIGHT OF BRITISH ARMY (1882).

Over 6 feet	English. 0.6	Scotch. 1-2	Irish. 0:3
5.10 to 6 feet	11.0	11-2	8.3
5.6 to 5.10	41.1	42.6	36.1
Under 5 feet 6 inches .	47.8	45.0	55.3
	100.0	100-0	100-0

# K.-ARMY MEASUREMENT (STATURE) (1860).

			٠.		•	
	Inches.		Inches.	1		Inches.
Italian .	. 65.0	Austrian	 66.2	Irish		68.0
Spaniard .	. 65.5	Belgian	 66.9	Scotch		68.5
French .		Russian		Swede		68-9
Hungarian	. 66.1	English	 67.5	Norwegian		69-0

The British and Italian armies compare as follows in ratios of height—

•				Perce	ntage.
Inches, Under 65				British.	Italian. 34
65 to 67	:	•	•	35	35
Over 67			•	60	31
				100	100

No less than 12 per cent. of the British army are up to or over 70 inches in height.

**APOPLEXY.**—This disease is becoming more prevalent in England, the number of deaths from this cause per million inhabitants rising as follows:—

			Per Million Inhabitants,
1850-66			. 457
1867-70			. 504
1871-73			. 517
1874-80			. 550

It has been accompanied with an increase in the rate of insanity (q.v.)

APPLES.—The crop in Great Britain averages 85,000 tons, valued at £10 per ton: about 12 million gallons of cider are made yearly. The production of cider in France averages 220 million gallons.

The orchards of Great Britain cover 180,000 acres; a ton of ordinary good apples will produce 200 gallons of cider. Great Britain imports 900,000 barrels of apples yearly from United States and Canada.

AQUEDUCTS.—Rome, in the time of the Cæsars, had 9 aqueducts, measuring 249 miles in the aggregate: they poured into the city 320 million gallons daily, or 200 gallons per inhabitant. The great aqueduct of Peru, built by the Incas, was 360 miles long. Among modern works the most famous are:—

Name.			Miles.	Million Gallons Daily.	Cost of Work.
Croton (New	Y	ork)	41	88	£1,800,000
Madrid .			47	40	2,300,000
Marseilles			51	60	450,000
(Flasgow			34	50	1,550,000
Washington			16	90	•••

See Water Supply.

#### AREA.

			Thousand Square Miles.	Millions of Acres.	Acres per Inhabitant.
England .			58.3	87	1.4
Scotland .			30.7	19 <del>1</del>	5-2
Ireland .	•	•	31.9	201	4.0
United K	Cingdor	n.	120.9	77	2-2
France .	•		201.1	129	3.4
Germany .			212.1	136	8-0
Russia .			2,261.7	1,448	18-0
Austria .			144.6	93	4-2
Hungary .			124.4	80	5-0
Italy			114.3	73	2.5
Spain .			182.8	117	7.1
Portugal .			36.5	23	5-2
Belgium .			111.4	7	1.3
Holland .			20.5	13	8-2
Denmark .			14.6	9	4.5
Sweden .			171-0	109	24.0
Norway .	•		122.3	78	40.0
Switzerland	i .		16.0	10	3.6
Greece .			19.9	13	8.0
Roumania.			48.3	31	5.8
Servia .			20.9	13	7-2
Turkey .	•	•	62 0	40	9.1
Europe			3,905·3	2,499	80
United Sta	tes .	•	3,603.9	2,306	44-0
Canada .			3,372.3	2,158	475-0
Brazil .			3,288.0	2,104	2320
China .		•	3,924.6	2,512	8-0
Asiatic Ru	ssia .		6,179.0	8,955	410-0
Australia .			8,104.0	1,986	666-0
India .			1,482 0	948	4.0

ARMADA.—That sent by Philip II. in 1588 for the intended conquest of England, and commanded by the Duke of Medina, comprised—

132 ships, 10,854 seamen, 3,165 cannon, 23,200 soldiers.

The British fleet under Lord Howard, supported by Drake and Hawkins, consisted of—

		Royal Navy	Vessels Hired.	Total.
Ships		. 41	135	176
Tonnage		. 16,000	18,500	34,500
Seamen		. 8,200	6,600	14,800

The Spaniards lost 35 ships and 13,600 men.

# ARMY.—The standing armies of Europe have increased 60 per cent. in 50 years:—

A.

	ARM	(THOUS	ands).	Soldiers per 10,000 Inhabitants.			
	1881.	1851.	1881.	1831.	1851.	1881.	
Great Britain .	102	129	189	42	46	54	
France	814	365	496	98	104	131	
Germany	.   331	346	445	121	105	99	
Russia	539	644	841	101	103	111	
Austria	271	282	268	104	94	72	
Italy	75	142	386	44	71	134	
Spain	. 46	87	90	40	62	55	
Portugal	. 28	28	83	77	73	76	
Belgium	20	40	46	55	92	84	
Holland	23	50	65	87	171	162	
Denmark	83	25	36	292	168	187	
Sweden and Norway	52	57	60	131	114	91	
Europe	1,834	2,195	2,955	87	92	98	

The following tables show the present military condition of nations:—

B.—ARMY IN THOUSANDS OF MEN.

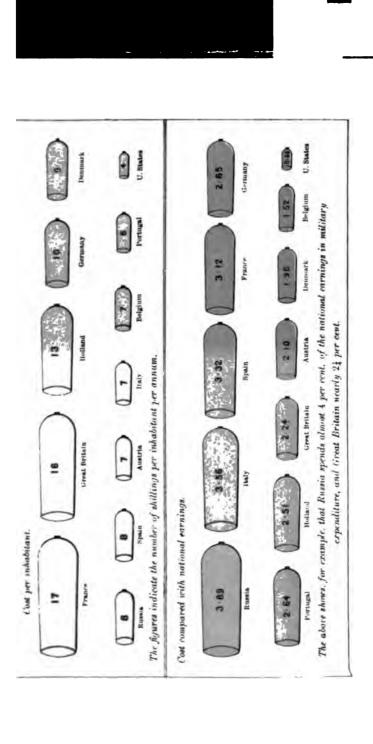
	Infantry.	Cavalry.	Artillery.	Train, &c.	Total.	No. of Field-Pieces.
Great Britain	125	18	34	12	189	702
France	283	69	69	75	496	1,938
Germany	305	67	54	19	445	2,040
Russia	626	86	109	20	841	2,278
Austria	175	51	28	14	268	1,540
Italy	257	34	60	35	386	500
Spain	60	13	10	7	90	348
Portugal	24	3	4	2	33	92
Holland	44	4	14	3	65	150
Belgium	81	5	8	2	46	204
Denmark	28	2	5	1	36	106
Sweden and Norway	44	7	7	2	60	300
Greece	58	3	5	2	68	96
Roumania	19	3	6	2	30	180
Europe	2,079	365	413	196	3,053	10,474
United States .	12	8	3	4	27	100
Total .	2,089	873	416	200	3,080	10,574

# C.—MILITARY STRENGTH, ARMY AND NAVY, IN 1869 AND 1881.

	Men (Thousands).		Cost (Millions £).		Total Army and Navy Ex- penditure. Ratio to Nationa Budget.	
	1869.	1881.	1869.	1881.	1869.	1881.
Great Britain	269	247	26.4	27 .9	35.1	33.6
France	493	565	25.0	29.6	32-0	24.4
Germany	380	460	12.9	22.5	25.8	26.5
Russia	876	871	21.5	29.5	33.1	87.0
Austria	283	278	10.4	12.6	22.9	167
Italy	199	401	7.5	10.4	16.3	16.8
Spain	174	102	5.4	6.3		19.0
Portugal	30	37	1.0	1.2		15.1
Holland	82	72	2.5	2.6	27.8	26.0
Belgium	73	46	1.4	1.8		15.6
Denmark	44	87	0.6	0.8	28.0	86.0
Sweden and Norway	60	69	1.0	1.8	22.5	25.7
Europe	2,963	3,185	115.6	147.1	26.1	25.3
United States	64	35	20.1	9.4	80.2	17:2
The World	3,027	3,220	135.7	156.5	27.0	24.6

## D.—ARMY AND NAVY STRENGTH AND EXPENDITURE

	Combatants per 10,000 Inhabitants.		Annual Cost per Combatant.		Expenditure to Population. Shillings per Inhabitant.	
	1869.	1881.	1869.	1881.	1869.	1881.
Great Britain	. 87	71	£98	£113	17	16
France	130	159	51	52	13	17
Germany	98	102	34	49	7	10
Russia	128	116	25	34	6	8
Austria	82	73	37	45	6	7
Italy	76	141	38	26	6	7
Spain	108	62	31	62	7	8
Portugal	70	85	83	82	5	6
Holland	234	180	31	36	13	13
Belgium	146	83	20	40	6	7
Denmark	250	178	14	24	7	9
Sweden and Norway	103	105	17	26	4	6
Europe	106	106	39	46	8	10
United States	17	7	314	270	11	4
The World	94	92	45	49	9	81



The ratio of combatants to population in Europe is exactly the same as in the year preceding the Franco-German war, but the expenditure for armies and navies having risen 30 per cent., is now two shillings per inhabitant higher, although in Great Britain it has declined a shilling. The armies and navies of the Continent absorb ten days' earnings of the population each year, those of Great Britain only seven days' earnings.

#### E.—British Army at Various Periods.

Year.	Men.	Per 10,000 Inhabitanta	Year.	Men.	Per 10,000 Inhabitants,
1661	5,200	9	1810	306,700	171
1688	28,000	51	1830	108,700	46
1730	17,000	30	1850	138,800	52
1764	40,000	53	1860	229,500	79
1792	57,300	60	1881	189,000	54

#### F.—Cost of British Army and Navy.

Year.	Expenditure.	Cost j Inhabi		National E-mings (Millions £).	Ratio of Mili- tary Expendi- ture to National Earnings.	
1810	£52,860,000	£2 18	8	250	21 · 2	
1830	13,915,000	0 11	6	350	4.0	
1850	15,392,000	0 11	5	610	2.5	
1870	24,623,000	0 16	2	961	2.5	
1881	27,954,000	0 16	0	1,247	2.2	

#### G.—BRITISH ARMY AND VOLUNTEERS.

The effective strength has increased since 1860 as follows:—

ws:—						
Year.	A	lru	Ŋ.	Volunteers.	Total.	Percentage of Population.
1860	22	21.0	304	106,400	328,004	í·13
1870	18	30,4	144	170,700	351,144	1.11
1881	18	8,9	986	206,535	395,521	1.13
Arm.				Army.	Volunteers.	Total.
Infantry .				126,400	159,500	285,900
Cavalry .				17,300	600	17,900
Artillery .				85,200	37,800	73,000
Engineers,	&c.		•	11,300	8,800	20,100
				190,200	206,700	396,900

According to Napoleon Bonaparte the proportions of an army should be 70 per cent. infantry, 17 per cent. cavalry, and 13 per cent. between artillery, engineers, and train. The regular army has 9400 officers, and 16,100 petty officers.

The army is composed as follows:-

Nationality. English 70 Irish 20 Scotch 8 Colonial 2	Religion. Church of England 64 Roman Catholic . 24 Presbyterians 8 Dissenters 4
100	100
Age. Under 18 years 2 18 to 30 years 74 30 , 40 , 20 Over 40 , 4	Height. Under 65 inches . 5 65 to 67 inches 35 67 , 70 , 48 Over 70 , 12
100	100

The composition of the army has changed very remarkably in the past 20 years, viz.:—

			1861.	1871.	1881.
English			56.8	64.1	68.8
Irish .			81.2	24.9	20.4
Scotch		٠.	9·1	8.6	8.0
Colonial			2.9	2.4	2.8
			100.0	100.0	100.0

The education of the men shows a great advance since 1860, viz.:—

				1800.	1001.
Able to read		•		84 per cent.	96 per cent.
Able to write	•	•	•	68 "	93 ,,

The total land military forces (1885) are as follows (000's omitted):—

			Horse,	Foot.	Artillery, &c.	Total
Regulars			17	134	51	202
Reserve			4	35	12	51
Militia			14	115	22	151
Volunteers			1	193	54	248
Indian army	•	•	20	97	4	121
Total			56	574	143	773

There are also 14,000 Irish Constabulary and 190,000 Indian police on military footing.

In active service the death-rate among officers is heavier than among the rank and file. The Duke of Wellington's army-roll from 1811 to 1814 showed—

		Officers.	Men.
Killed	•	. 14.5 per cent.	10.2
Wounded .		. 810 ,	49.0
Died of disease		. 18-0 "	380

For death-rate of armies in times of peace, see page 130.

#### H.—Conscription for French Army.

Years.					Annual Average,	Per 1,000 Inhabitants.
1816-23					40,000	1.33
1824-29	•				60,000	1.90
18 <b>3</b> 0–52				٠.	80,000	2.40
1853-58			•	•	140,000	3 <b>-9</b> 0
185968	•				100,000	2.70
1872-80	•	•	•	•	160,000	4-25

ARTESIAN WELLS.—They were known at Thebes 2000 years before the Christian era. In modern times that of Grenelle, near Paris, is the most famous, having taken eight years in boring, 1833—41; it gives 700,000 gallons daily, the water rising 32 feet above the surface, with a temperature of 81½° Fahr.

	Depth, Feet.	Diameter, Inches.	Gallons Water per Minute,	Cost of Well.
	1,798	3.74	484	£14,550
	1,923	27.60	1,980	40,000
	1,880	4.00	600	7,000
	2,200	l i		2,000
	700		820	
	1.138			8,560
•	1,215			3,045
	393		50 <b>0</b>	l
	592	1		320
	177		1.130	l
	492	2.95	66	l
	262	2.28	28	
	-	1,798 1,923 1,880 2,200 700 1,138 1,215 398 592 177 492	Feet   Inches.	Feet.   Diameter, Inches.   Water per   Minute.

There are 78 of these wells in England, varying from 100 to 1000 feet. Several have been sunk in China more than 1000 feet, at a cost of only seven shillings per foot.

ARTILLERY.—There are about 37,000 pieces of cannon, of which only 20,000 can be said to be in use.

#### A.

				Army.	Navy.	Fortifica- tions, &c.	Total.
Great Brits	in			702	1,480	2,000	4,182
France				1,938	2,834	2,800	7,572
Germany				2,040	570	2,770	5,380
Russia .				2,278	836	2,010	5,124
Austria				1,540	320	1,000	2,860
Italy .				500	480	500	1,480
Spain .			0.2	348	525	300	1,173
Portugal				92	178	110	380
Holland			100	150	560	120	830
Belgium				204		40	244
Denmark				106	245	170	521
Sweden and	l No	rway		300	672	100	1,072
Greece .				96	70	110	276
Roumania				180	36	94	310
Turkey	•			650	200	100	950
Europe	e .			11,124	9,006	12,224	32,354
United Sta	tes			100	1,055	3,000	4,155
Brazil .				50	166	200	416
Japan .				120	149	100	369
Total				11,394	10,376	15,524	37,294

At the close of the Franco-German war the Germans took from the French 7234 pieces of cannon, including 3485 field-pieces, and 3300 fortress guns. At the battle of Waterloo the British artillery fired 9467 rounds, or one for every Frenchman killed. The progress of gunnery in the last ten years is shown as follows:-

- 1872. First Woolwich infant—35 ton, 16 feet, shot 700 lbs., powder 120 lbs. It sent a Palliser shot through 18½ inches iron and 12 of teak.
  1874. Second Woolwich infant—80 ton, 27 feet, shot 1650 lbs., powder
- 300 lbs
- 1876. Third Woolwich infant-81 ton, shot 1250 lbs., went through 50 feet sand.
- 1877. Armstrong guns, 100 ton, for Italian ironclad Duilio. For marine artillery, see page 326.

The cost of heavy guns is as follows, per ton :-

Cast iron		£ 21	Krupp Whitworth		£170
Armstrong		100	Whitworth		175

## ASSES.

## B.—Initial Velocity.

Gun.		Powder (lbs.)	Shot (lbs.)	Velocity (feet).
Rifle, 6-inch		16	35	1.917
,, ,,		12	71	1,355
" "		11	107	1,107
., 7-inch		13	100	1,130
Smooth 9-inch		15	104	1,254

## C.—CANNON OF MIDDLE AGES.

Name.	Shot (ibs.)	Powder (lbe.)	Gun (cwts.)	Length (feet).
Cannon .	64	32	72	12
Serpentine	52	26	62	12
Culverin .	19	15	40	12
Demi-culverin	10	8	20	10
Falcon .	2	2	6	7

## FAMOUS PIECES OF CANNON.

Date.	Name.		Place.	Tons.
1430	Dulle Griete		Holland .	14
1450	Mons Meg		Edinburgh	6
1464	Mahomet		Turkey .	20
1548	Malik Mydan		India .	40
1586	Czar Pooshka	•	Moscow .	39
1628	Dhool-Dhanee		India .	30

ASSES.—The number, compared to population, in various ountries, is as follows:—

	No.	Per 1000 Inhabitant <b>s.</b>
United Kingdom .	337,000	10
France	406,800	11
Austria	96,000	3
Italy	501,600	17
Spain and Portugal	2,510,000	125
Greece	94,000	55
Belgium and Holland	15,000	2
Germany	40,000	1
Egypt	88,000	18

The number has increased in the United Kingdom as ollows:—

	1850.	1880.
Great Britain .	130,000	150,000
Ireland	141,000	187,000
United Kingdom	271 000	337 000

ASSESSMENTS OF INCOME.—The number of persons assessed in Great Britain down to 1850, and the United Kingdom since that date, have been as follows:—

	Persons Assess	PER MILLIO	STRATISABEL E	
Year. 1812	. Over £5000. 409	£200 to £5000. 39,356	Over £5000. 84	£200 to £5000. 3,280
1850	1,181	64,208	56	3,059
1860 1870	1,558 2,080	83,972 128,29 <b>5</b>	53 67	<b>2,896</b> <b>4,</b> 139
1880	2,954	207,476	88	6,225

The following tables are based on the Probate Court returns, the valuation of houses, and other sources:—

## A .- INCOME OF ENGLAND AND WALES.

Class.		No. of Families.	Average Income.	Amount, Millions &	
Rich .			193,200	£1,500	290
Middle .			1,531,000	250	383
Working			8,498,000	105	367
Tot	al		5,222,200	200	1,040

#### B.—Income of Scotland.

Class.			No. of Families.	Average Income.	Amount, Millions &
Rich .			24,200 ·	£1,250	30
Middle .			193,400	255	49
Working	•		529,200	85	45
To	tal		746,800	165	124

#### C .- INCOME OF IRELAND.

Class.			No of Families.	Average Income,	Amount, Millions &
Rich .		•	14,400	£970	14
Middle .			172,000	200	34
Working		•	845,600	45	38
To	tal		1.032.000	84	. 86

#### D.-Income of United Kingdon.

Class.		No. of Families.	Average Income.	Amount, Millions &		
Rich				231,800	£1.440	334
Middle				1,896,400	245	466
Workin	œ			4.872.800	92	450
						<b>'</b>
	To	tal	_	7.001.000	180	1.250

### ASSIGNATS.

#### E.—Income of France.

	Clas	۵.		No. of Families.	Average Income,	Amount, Millions &
Rich			•	158,210	£800	127
Middle		•		1,666,700	200	338
Workin	g			5,879,810	85	505
	To	tal		7,704,220	125	965
		_				

#### F.—Income of Germany.

Class.		No. of Families.	Average Income.	Amount,
Rich		120,810	£730	88
Middle		686,250	160	110
Working .	•	8,581,900	76	652
Total	•	9,388,960	90	850

#### G .- INCOME OF ITALY.

Class,		No. of Families.	Average Income.	Amount, Millions &.
Rich		30,990	£520	16
Middle		892,000	110	48
Working .	•	5,243,010	55	<b>286</b>
Total		5,666,000	61	345

## H .- INCOME OF SPAIN.

Clas	<b>18.</b>		No. of Families,	Average Income.	Amount,
Rich .			25,120	£880	22
Middle .			212,300	110	23
Working	•	•	3,261,180	43	140
To	tal		3,498,600	53	185

## I.—Landowners of Austria-Hungary.

Class.	Land-Tax.	No. of Owners.
1st	£40	56,514
2d	20 to 40	162,218
3d	8 to 20	584,300
4th	4 to 8	675,100
5th	under £4	4,673,092
		6,151,224

The incomes of other countries cannot be classified. See Income.

ASSIGNATS.—The amount issued by the first French Republic reached in 1790 the nominal sum of 360 millions sterling; they became so depreciated that a pair of boots cost £300, and a pound of butter £30.

# ASYLUMS—BALANCE OF TRADE.

#### ASYLUMS.

30

No. of asylums				nited Kingdom. 652	France. 1,105
No. of beds . Maintenance		•		104,000 £2,600,000	120,300 £2,760,000
See Blind, Deaf	and.	Dui	ાં છે.		

# B

## BACON.—See Meat, Pigs.

BALANCE OF TRADE.—The imports of all nations during 20 years ending 1880 amounted to 12 per cent. more than exports, which proves that freight and commissions add 12 per cent. to the original value of merchandise when shipped. Freight averages £8 for every £100 worth of merchandise carried.

		MILL	Surplus	Surplus			
'	Im	ports.	orts. Exp			Exports.	
	1861-70	1871-80.	1861-70.	1871-80.	20 Years.	20 Years.	
United Kingdom	2,701	8,714	2,129	2,778	1,508		
France	1,090	1,560	1,100	1,390	160		
Germany	950	1,740	680	1,270	740		
Russia	270	490	280	480			
Austria	302	570	350	505	17		
Italy	361	472	263	444	126		
Spain and Portugal	222	253	164	242	69		
Belgium	305	562	246	441	180	l	
Holland	319	<b>63</b> 0	258	432	259		
Scandinavia	169	348	151	262	104		
Greece, Turkey, &c.	183	174	225	159		27	
Europe	6,872	10,513	5,846	8,403	3,136	l	
United States .	493	988	361	1,122	1	2	
Canada	161	179	132	151	57		
Australia	289	402	191	843	157		
India	293	368	518	597		454	
China and Japan .	244	289	233	271	29		
South America .	528	587	513	658		56	
Egypt	73	52	184	136		195	
Java	52	91	93	165		115	
Other countries .	223	<b>3</b> 18	230	311		•••	
Total	9,228	13,787	8,301	12,157	2,557		

**BALLAST.**—In recent years the port entries of Europe show a declining ratio of vessels in ballast, although in the United Kingdom the ratio has risen.

Ports of		of Ballast ries.	Ratio to all Port Entries.		
20.00	1865.	188).	1865.	1880.	
Illiad Vindon	0.150.000	F 070 000	Per cent.	Per cent.	
United Kingdom	2,158,000	5,076,000	14	17	
France	230,000	897,000	5	8	
Germany	812,000	1,705,000	18	23	
Russia	1,253,000	8,118,000	52	46	
Austria	831,000	862,000	26	19	
Italy	355,000	427,000	11	10	
Spain	242,000	1,085,000	17	86	
Belgium	21,000	110,000	2	8	
Holland	212,000	71,000	10	2	
Denmark	110,000	906.000	18	45	
Sweden	1,104,000	1,797,000	69	60	
Norway	998,000	852,000	70	45	
Europe	8,321,000	16,356,000	21	20	
United States	l	3,140,000		21	

**BALLOONS.**—The most remarkable ascents on record are—

Date.	Aeronaut.	Place of Ascent.	Height. Yanda.	Distance Miles.
1783	Montgolfier .	Lyons	2,000	
1804	Gay Lussac .	Paris	7,700	
1836	Holland	London		500
1859	. Wise	New York	•••	1,150
1862	Glaisher	Wolverton .	12,000	

During the siege of Paris, September 1870 to February 1871, there were 64 balloons sent up, containing 91 passengers, 354 pigeons, and 3 million letters (weighing 9 tons). See Aeronaut, Barometer, Sound.

# BANANA—BANKS.

32

BANANA.—The most prolific of all fruits of the earth, being 44 times more productive than potatoes, and 131 times more than wheat.

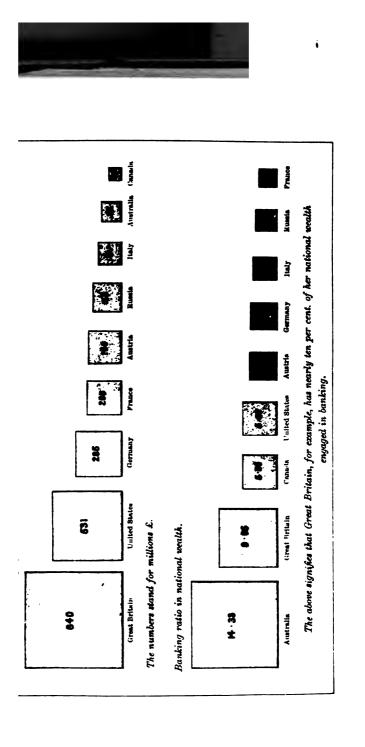
BANKS.—Since 1840 the banking of the world has increased about eleven-fold, that is, three times as fast as commerce, or thirty times faster than population.

## A.—CAPITAL ENGAGED IN BANKING.

			Millions £.			
		Capital.	Deposits.	Total.	per Inhi bitant.	
United Kingdom .		270	570	840	£25	
France		55	150	205	6	
Germany		85	200	285	6	
Russia		45	110	155	2	
Austria	: :	36	130	166	5	
Italy.		81	60	91	8	
Spain and Portugal.		12	10	22	5 3 1 5 7	
Belgium		7	20	27	5	
Holland		6	20	26	7	
Scandinavia		11	24	35	4	
Europe		558	1,294	1,852	£6	
United States		145	386	531	10	
Canada		17	18	85	8	
Australia		19	66	85	.30	
Totals		739	1,764	2,503	£7	

## B.—RATES OF INTEREST SINCE 1850.

							1851-60.	1861-70.	1871-90.	Average of 30 years.
Great Bri	tai	'n		•	•		4.17	4-23	3.28	3.89
France.							4.30	3.55	3.94	3.93
Germany							4.05	4.56	4:30	4.30
A A .							5.26	4.77	4.79	4.94
Italy .							5.35	5.69	4 85	5.30
Holland	:						3 60	3.98	3.40	3.67
Belgium					Ċ		3.62	8.59	8.60	3.60
Europe	:		·	•	:	•	4-27	4.80	3.71	4.09



# C.—Insue and Specie Reserve of all Banks in 1880.

	Mitzione &.		Batio of	Items per		
·	Isma.	Reserve.	Beserve:	Inhabitant		
United Kingdom	48	28	77.	£1 4 6		
France	92	79	86	2 10 0		
Germany	50.	81	62	1 2 0		
Busic	116	28	. 24	1 8 0		
Austria	66	17	25	1 16 0		
Italy	67	8	19	280		
Switzerland	7	2	. <b>28</b> 50	·0 \$ 0 1 10 0		
Belgium.	14		28			
Holland	17	12	70	2 12 0 4 5 0		
Sweden and Norway	17	2	28	1 2 0		
Denmark	1	2	50	2 1 0		
Greece	8	ī	33	1 15 0		
Europe	490	221	45	£1 12 0		
United States	149	68	46	2 15 0		
Spanish America	70	10	14	8 6 0		
India	12	12	100	0 1 3		
Australia	12	12	100	4 5 0		
Canada	8	2	25	1 16 0		
Totals	741	325	44	£1 9 0		

The Issues and Reserves of the principal banks were as follows:—

Bank,	Isauz (Mii	Lions <b>£).</b>	Specie Reserve (Millions &).		
	1871-80.	1880.	1871-80.	1880.	
England	27	27	26	28	
France	94	92	67	79	
Germany	50	50	31	31	
Russia	121	116	31	28	
Austria	65	66	15	17	
United States .	153	149	31	68	
Totals	510	500	201	251	



# C.—Issue and Specie Reserve of all Banks in 1880.

	Millions &.		Ratio of	Issue per	
	Issue.	Reserve.	Reserve.	Inhabitant.	
United Kingdom	43	83	77	£1 4 6	
France	92	79	86	2 10 0	
Germany	50	31	62	1 2 0	
Russia	116	28	24	1 8 0	
Austria	66	17	25	1 16 0	
Italy	67	8	12	2 8 0	
Spain	7	2	28	0 9 0	
Switzerland	4	2 2	50	1 10 0	
Belgium	14	1 4	28	2 12 0	
Holland	17	12	70	4 5 0	
Sweden and Norway	7	2	28	1 2 0	
Denmark	4	2	50	2 1 0	
Greece	8	1	33	1 15 0	
Europe	490	221	45	£1 12 0	
United States	149	68	46	2 15 0	
Spanish America	70	10	14	3 6 0	
India	12	12	100	0 1 3	
Australia	12	12	100	4 5 0	
Canada	8	2	25	1 16 0	
Totals	741	325	44	£1 9 0	

The Issues and Reserves of the principal banks were as follows:—

Bank,	Issue (Mi	LIONS £).	Specia Reserve (Millions £).		
	1871-80.	1880.	1871-80.	1890.	
England	27	27	26	28	
France	94	92	67	79	
Germany	50	50	31	31	
Russia	121	116	31	28	
Austria	65	66	15	17	
United States .	153	149	31	68	
Totals	510	500	201	251	

## D.—RATES OF INTEREST IN 1882.

London . Paris			Open Market, 3:37 3:87	Berlin Amsterdam .		Open Market. 8:87 4:25
Vienna . Hamburg	•	4.12	3·75 4·00		4.50	4-25 6-12

## E.—THE THREE GREAT BANKS.

Number of shares	Bank of England.	Bank of France.	Bank of Germany.
	145.600	18,300	40,000
Capital	£14,500,000	£7,300,000	£6,000,000
Real value of shares		£23,000,000	£9,000,000
Ordinary dividend		15 per cent.	6 per cent.

## F.—Banks of England and France Compared.

	Millions &							
Year.	Bank of	England.	Bank of France.					
	Issue.	Reservo.	Issue.	Reserve				
1810	21.0	3.5	4.0	1.6				
1830	20.1	9.2	8-9	5.8				
1850	20.4	16.0	19.7	17.9				
1870	24.5	22.3	57.6	49.8				
1882	25-9	20.4	112.2	84.2				

# G.—BANK OF FRANCE DISCOUNTS.

#### Millions sterling.

Paris.	Branches.	Total	Ratio to Pop.
42	23	65	£2
53	53	106	8
84	140	224	6
103	158	261	7
220	235	455	12
	42 53 84 103	42 23 53 53 84 140 103 158	42 23 65 53 53 106 84 140 224 103 158 261

## H.-BANK OF PRUSSIA.

Amount of Turn-over   (Thousands omitted).						Amount of Turn-ove (Thousands omittee			
1820		•		£11,400	1850	• `		£77.100	
1830				85,500	1860		•	208,000	
1840				45,200	1870			830,000	

It has now become the Imperial Bank of Germany.



## BANKS.

# The Germin banks in December 1880 showed as follows: (thousands emitted) :---

Charles .		_	Imperial.		Various. £7,500	Total. £13.500
	:	•	£1,000	•	10,000	51;600
Benerve	• •	•	20,500		6,000	85,590
Deposits	•	•	9,000		8,500	12,500
Discounts	•	•	24,500		14,000	88,500

Besides the above, the Mortgage Banks had a capital of 18, and an issue of 80 millions sterling.

# I.—GROWTH OF THE BANK OF ENGLAND.

The capital of the Bank has risen as follows:-

1004	•	•	£1,200,000	ı	1782	•	•	£11,600,000
1708	•	•	4,400,000				•	14,500,000
1746	•	•	10,800,000	ı	1882	•	•	14,500,000

	Millions &.						
Year,	Circulation.	Deposits.	Securities.	Bullion.			
1780	8-4	4.7	10.9	8.6			
1790	10.0	6-2	10.3	8.6			
1800	16-8	7.1	21.4	6.1			
1810	21.0	12·5	85.4	3.5			
1820	23.5	4.1	26-2	4.9			
1830	20.1	10.8	24-2	9-2			
1840	16.5	6.6	21.6	4.8			
1850	20.4	18.4	26.0	160			
1860	21-5	18.8	29.4	14.0			
1870	24.5	24.2	29.5	22.3			
1880	27.1	<b>3</b> 3·1	84.8	27.9			
1882	25.7	28.8	37.1	20.4			

## K.-BANKING IN SCOTLAND.

oital.	Demonths		Per Inhabitant.
	Deposita.	Total.	
11	83	44	£15
	43		18
- 1			20
10			25
9	78	87	24
	12 9 10	12 43 9 56 10 78	12 43 55 9 56 65 10 78 88

The issue rose from £3,100,000 or 22 shillings per head in 1845, to £5,600,000 or 30 shillings per head in 1882.

## L-Joint-Stock Banks in United Kingdom.

In June 1882 there were 186 banking companies, of which 120 were English, 10 Scotch, 9 Irish, and 47 Colonial, whose business stood as follows:—

	Millions &.				
	English.	Scotch.	Irish,	Colonial.	Total
Capital	52	9	7	40	108
Reserve	22	6	3	15	46
Value of stock	138	24	20	68	250
Issue	28	6	7	10	51
Deposits	279	79	23	132	513
Cash	82	14	6	33	135
Government securities.	52	12	2	12	78
Discounts	225	62	20	251	558
Assets	398	105	32	250	785

It appears from the foregoing that although the nominal capital and reserve employed in banking do not exceed 154 millions, the shares represent an actual value of 250 millions; the above does not include private banks.

## M.—Increase of Banking in United Kingdom.

		MILLIONS &. CAPITAL AND DEPOSITS.			NT PER UTANT.
		1850.	1882.	1850.	1852
England		207	660	£11	£26
England Scotland		36	103	12	28
Ireland		17	43	3	8
United Kingdom		260	808	£10	£23

The banks of the United Kingdom are owned by 88,000 shareholders, the average capital to each shareholder being £1000 in Scotland, £780 in England, and £720 in Ireland.

# M<sup>2</sup>.—Gold Value of Bank of England £5 Note, 1797-1820.

Years. 1797–99	Shillings. 100	Years, 1810	Shillings. 87	Years. 1815	Shillings.
1800-1	92	1811	83	1816	96
1802-3	96	1812	79	1817	98
1804-8	97	1813	73	1818-19	97
1809	91	1814	80	1820	100

## N.-BANK-NOTE ISSUE OF UNITED KINGDOM.

		Tho	Thousands Omitted.			Per Inhabitan (Shillings).		
		1844.	1874.	1882.	1844.	1874.	1882.	
England . Scotland . Ireland .	: :	£28,400 8,000 5,900	£31,200 5,900 6,800	£28,900 5,600 7,300	34 22 15	25 35 26	22 30 29	
United Ki	ngdom .	£37,300	£43,900	£41,800	27	27	23	

## O.—COLONIAL BANKING.

		AUSTRAL	CANADA, 1882.			
	Ame (Thousand		er oit <b>ant</b> ,	Amount (Thousands	Per Inha	
	1872.	1882.	1872.	1882.	Omitted).	bitant.
Paid Capital	£9,300	£17,400	£4	£6	£17,700	£4
Discounts .	31,500	74,600	15	25	30,100	7
Liabilities .	33,500	71,400	16	24	31,000	8
Assets	42,800	93,000	20	34	48,100	11

# P.—Australian Banks in 1881.

	1	THOUBAND	RATIO PER INHAB.			
	Deposits.	Discounts.	Axeeta.	Liabilities,	Deposits.	Discounts
Victoria.	£20,360	£18,195	£23,908	£22,040	£23	£21
N. S. Wales	18,770	17,210	25,390	20,405	25	23
N. Zealand.	9,290	11,480	14,060	10,330	17	21
S. Australia	4,540	5,510	7,215	5,190	16	20
Queensland	3,408	3,970	5,520	4,115	13	16
Tasmania .	2,252	1,620	2,290	2,380	19	14
W.Australia	330	405	610	390	11	13
Total	£58,950	£58,390	£78,993	£64,850	21	21

BANKS.

## Q.—Canadian Banks in 1881.

	THO	OMANDS OM	RATIO PER INHABITANT		
	Capital.	Assets.	Liabilities.	Capital.	Azoota.
Quebec	£12,400	£25,100	£15,800	£9	£18
Ontario	3,600	15,000	10,800	2	8
Nova-Scotia	1,200	3,100	1,900	3	7
New Brunswick	600	1,100	600	2	3
Total	£17,800	£44,300	£29,100	£4	£10

#### R.—BANKS IN UNITED STATES.

Period.	No. of Banks.	Paid Capital (Millions £).	Inste (Millions £)
1830-39	835	53	21
1840-49	760	43	22
1850-60	1.475	79	40
1861-78	3,100	101	70
1879-80	6,360	131	70
1882	6,813	145	71

There are 2132 National Banks and 4681 State or private banks. Deposits and capital, 531 millions sterling, or £10 per inhabitant, against £23 in the United Kingdom. The distribution of banks in December 1880 was as follows:—

States.				No. of Banks.	Capital and Deposits (Millions £).	Amount per Inhabitant.
New England Middle				1,080 1,920	144 244	£36 21
Southern Western				670 2,690	31 112	2 6
The Union	•	•	•	6,3:0	531	£10

The shares of the National Banks are held by 208,000 persons, showing an average banking capital of £700 per shareholder, against £800 in Great Britain. Of 7 million shares only 26,000 are held in Europe, of which 7000 in Great Britain.

The statement of the National Banks for October 1881 compares with that of 8 years before, as follows, in millions  $\pounds$ sterling :-

	October 1873.	October 1881.	Difference.
Capital .	. 90 ·	97	+ 8 per cent.
Reserve .	. 32	38	+ 18 ,
Imme .	. 62	67	+ 8 ,,
Deposits .	. 118	225	+ 90 ,,
Discounts	. 174	244	+ 40 ,,

The figures for 1873 represent the effective value in gold at the exchange of \$88 per \$100 greenback.

The total of banking capital and deposits compares with

public wealth as follows:-

	MILLIONS	e.	PAR INHABITANT.		
States.	Bank Capital, &c.	Wealth.	Bank Capital, &c.	Wealth.	
New England	144	990	£36	£248	
Middle	244	8,280	21	283	
Southern	31	884	2	58	
Western	112	3,182	6	170	
The Union .	531	8,336	£10	£160	

## S.—BANKING AND COMMERCE.

	Milli	ons, £.	Banking
	Bank Capital and Deposits.	Net Imports and Exports.	Ratio to Commerce.
United Kingdom	840	570	144
France	205	332	61
Germany	285	315	90
Russia	155	151	102
Austria	166	128	130
Italy	91	96	95
Spain and Portugal	22	54	40
Belgium	27	116	23
Holland	26	121	22
Scandinavia	85	55	63
Europe	1.852	1,938	105
United States	531	309	170
Canada	85	35	100
Australia	85	101	84
The World	2,503	2,383	105

## BANKRUPTCY.

## A.—Average for Years 1879-81.

	No. of Failures.	Amount	Ratio to Commerce.
United Kingdom	13,720 5,580 1,414 5,715 920	£31,300,000 10,200,000 1,820,000 16,300,000 2,730,000	Per cent. 51 3 11 51 51 8

# B.—FAILURES IN ENGLAND AND WALES.

	Annual	Average.	A ======	Damasadama
Years.	Number.	Millions &.	Average per Failure.	Percentage of Ameta.
1870-72	6,039	15·3	£2,500	80
1873-75	<b>7,766</b>	21.6	2,800	29
1876-78	10,077	23.5	2,300	30
1879-81	11,052	21.2	1,930	31
1882-84	7,263	18.1	2,500	29

## The wholesale failures in recent years have been :-

Year.	London.	Provinces.	Scotland.	Ireland.	Total.
1880	385	972	99	22	1,478
1882	399	823	78	14	1,314
1883	877	885	83	16	1.361

# C .- Assets in Bankruptcy, England and Wales.

	Nu	nber.	Percentage.		
A secta.	1870.	1881.	1870.	1881.	
Under 5 per cent.	123	963	7	25	
5 to 25 ,,	833	2,256	44	58	
25 to 40 "	316	349	17	9	
Over 40 "	616	322	82	8	
Total	1,888	8,890	100	100	

## D.—BANKRUPTCY REPORT, ENGLAND, 1870-80.

	No. of Cases,	Amount.	Assets.	Ratio of Assets.
1870	5,002	£17,400,000	£5,300,000	30 per cent.
1880	10,298	16,200,000	4,600,000	28 ,,
Average 10 years	9,515	20,300,000	6,200,000	31 "

The cases liquidated in Court showed that law costs absorbed 40 per cent. of assets.

## E.—IRELAND, 1876-80.

The aggregate of Court business in the five years was as follows:—

The average dividend, therefore, was 20 per cent.

### F.-FRANCE, 1840-81.

#### ANNUAL AVERAGE.

Years.	No. of Failures.	Ratio of Assets.
1840-50	3,480	31 per cent.
1860-70	5,120	21 ,,
1878-81	5,580	17 ,,

The decline of assets is ascribed to a great increase of fraudulent trading.

The following table shows the number of failures compared with that of merchants and traders:—

Year.	No. of Merchants.	Failed.	Ratio to Merchants.	Failures over £2000.
1844	1,414,000	3,011	2.1 per cent.	52 per cent.
1954	1,420,000	3,691	2·6 ,	48 ,,
1864	1,410,000	4,642	3.3 ,,	43 ,,
1874	1,606,000	5,508	3.4 ,,	54 ,,

Not only has the ratio of failures risen, but also the average amount per failure.

## G.—United States, 1866-82, Average.

Years.	Number.	Amount.	Average.
1866-72	2,889	£17,100,000	£6,000
1873-80	6,560	32,200,000	4,900
1882-84	8,960	84,550,000	3,800

## H.—Canada, 1879-82.

Years. 1879–80	Number. 1.060	Amount. £3,080,000	Average.
1018-00	, 1,000	<b>£</b> 3,000,000	£3,000
1881-82	625	1,450,000	2,300

In the 18th century the number of bankruptcies in England averaged 177 yearly down to 1750, and 460 in the 50 years following.

The most remarkable failures since 1760 are described under the title of *Crisis*.

BARLEY.—The principal features of this crop are:—

	Acres (Thousands Omitted).	Crop, Million Bushels,	Bushels per Inha- bitant.	Bushels per Acre.
United Kingdom	2,590	90	21	34
France	3,500	80	2	23
Germany	8,900	90	2	23
Russia.	15,500	130	11	8
Austria	5,100	81	2	16
			2	18
Italy and Spain	4,700	95	Z	
Belgium and Holland	230	8	1	85
Scandinavia	1,300	39	4	30
Roumania, &c	2,000	40	5	20
Europe	38,820	653	2	17
United States	1,700	40	1	24
Japan	2,000	50	14	25
Egypt	1,000	15	3	15
Algeria	2,000	45	14	2:2
British Colonies		34	5	36
Dritish Colonies	940		0	- 36
Totals	46,460	837	2	18

In the United Kingdom we consume 2 bushels per inhabitant in the form of beer. See Malt.

BAROMETER.—In London it ranges between 28.700 and 30.700, but it has exceeded the latter figure three times on record—

Mr. Glaisher's barometer in his various balloon ascents marked as follows:—

Miles High.	Inches.	Miles High.	Inches.
1	24.7	4	13.7
2	20.3	5	11.3
3	16:7	İ	

He therefore estimates for 10 miles 4.2, and for 15 miles 1.6 inches. See *Meteorology*.

The mean height of barometer varies according to latitude . as follows:—

Degree Latitud			1	Carometer.	Degree			1	Barometer.
10	•			29-98	45	•			30.00
20				80.06	50				29.81
30		•		80.11	60	•			29.80
40				30-02	67		•		29.67

It varies according to elevation as follows:-

	Ų			
	Fect	Mean Barometer.	Feet	Mean . Barometer.
	AUUVE DOE.	Derometer, j	MOOVE DOE	. Darimeter.
Sea-level	. 0	80-00	Madrid 1,995	27:72
Rome .	. 151	2976	St. Rémy . 5,265	24.45
Milan .	. 420	29.45	St. Gothard. 6,808	23 07
Moscow .	. 984	28.82	Mexico 7,471	22·52
Geneva .	. 1,221	28.54	Bogota 8,731	21.42
Munich .	. 1,765	27.95	Quito 9,541	20.75

BARRACKS.—The death-rate in Indian barracks before the adoption of Dr. Farr's reforms, in 1860, averaged yearly 68 per 1000; in recent years it has fallen to 9 per 1000, the difference being equivalent to a saving of 6 per cent., or 4200 soldiers per annum. The proper allowance of air in barracks is 600 cubic feet per man in Europe, and 1000 in India. Horses in England require 1600 cubic feet each.

The report to Parliament in 1861 showed that there were 243 barracks in the United Kingdom holding 76,000 men, but with accommodation for no more than 54,000 at the rate of 600 cubic feet of air per man. The average ranged from 290 to 550 cubic feet. The new barracks at Chelsea are regarded as a model, and cost £296,000, or £245 per man, including the cost of site.

BARRAGES.—There are numerous works of this kind on the Seine, Thames, Nile, and other rivers, besides those made by the French in Algeria. At St. Denis du Sig, at the foot of Mount Atlas, there is a "barrage" 50 feet high, built by the French Government at a cost of £20,000. Near it is the Habra, constructed by a French company at a cost of £160,000, for the irrigation of a farm of 100 square miles; the principal breakwater is 130 feet high, 120 thick, and 1500 feet long, containing 14 million tons of water, yet the sluice can be opened by one man. See Irrigation.

BARRENNESS.—One woman in 20, one man in 30, that is, about 4 per cent. of the population. It is found that one marriage in 20 is barren, say 5 per cent. Among the nobility of Great Britain 21 per cent. have no children.

owing to intermarriage of cousins, no less than 4½ per cent. of the present nobility being married to cousins. See Marriage.

## BASTARDY.—See Births, Illegitimacy.

BATHS.—The use of baths among the working classes in London is shown by the receipts at various dates, as follows:—

1850			£9,800
1860	•	•	25,000
1880			41,000

The baths in Germany are visited annually by upwards of 150,000 foreigners. See *Mineral Waters*.

**BATTLES.**—The numbers placed hors-de-combat are not relatively so large as formerly.

	M	ien Engaged.	Hors-de-combat,	R	atio.
Thrasymene .		65,000	17,000	27 p	er cent.
Cannæ		146,000	52,000	34	22
Bannockburn .		135,000	38,000	28	
Agincourt		62,000	11,400	18	12
Cressy		117,000	81,200	27	29
Marengo	·	58,000	13,000	22	"
Austerlitz		170,000	23,000	13	"
Borodino	Ī	250,000	78,000	31	,,
Waterloo	:	145,000	51,000	35	"
Alma		108,000	8,400	8	"
Sadowa	•	402,000	33,000	8	
Gravelotte	•	320,000	48,500	15	**

## BEEF .- See Meat.

## BEER.—The following table shows the production:—

	No. of Brewerles.	Million Gallons.	Gallons per Inhabitant.
United Kingdom	16,114	1,025	29-0
France	3,100	190	5.2
Germany	23,940	880	19.4
Russia	460	68	0.7
Austria	2,297	245	6.4
Italy	200	20	0.7
Switzerland	400	16	5.6
Belgium	2,500	170	81.5
Holland	560	85	8.8
Denmark	240	25	13.0
Sweden and Norway.	640	35	5.8
Europe	50,451	2,704	9-2
United States	8,298	540	10.2
Total	53,744	8,244	9.7

The strength varies as follows:-	The	strength	varies as	follows	:
----------------------------------	-----	----------	-----------	---------	---

			1	Alcohol.	Malt per Barrel.
Burton ale				8-2	4.5
Bass's "				8.4	4.2
Edinburgh ale					1.8
Guinness's ,,				6.8	2.9
London porter				4.1	1.9
"beer.				<b>3</b> -9	17
Lager " .	•	•	•	<b>3</b> ·2	1.5

The consumption in the United Kingdom in 1881 was as follows:—

						Million Ballons.	Gallons per Inhabitant
England						905	34.8
Scotland						89	10.5
Ireland	•	•	•	•	•	63	12·1
United	l B	Cin	gdo	m		1.007	28.6

In 1882 one firm brewed 44 million gallons, 570 over 400,000 gallons each, and the rest under 400,000 gallons; duty 2-08d. per gallon, or £8,700,000 on the amount brewed. Exported, 16 million gallons.

The consumption in France has risen as follows:-

Year.	Million Gallons,	Per Inhabitant.	Year.	Million Gallons,	Per Inhabitant,
1830	66	2.0	1860	143	4.0
1840	95	2.8	1870	154	4.0
1850	110	3.1	1880	190	5.1

The annual consumption in England and Wales has

been :—					
Period.	Million Gallons.	Per Inhabitant.	Period.	Million Gallons.	Per Inhabitant.
1660-1700	255	44	1801-1830	335	30
1701-1750	215	35	1831-1860	560	33
1751-1800	252	32	1861-1880	835	36
			•		. •

The price per gallon during 680 years has ruled thus:-

Period. 1201-1300 1301-1600 1601-1700	•	:	•	Pence. 3 5 6	Period. 1701–1800 1801–1880 1882	•	•	Pence 11 . 17 . 20
1001-1100	•	•	•	0 1	1002	•	•	. 20

The above are according to weight of silver, but the nominal price was, for example, in the 13th century one penny. See *Drink*, *Liquor*.

BEES.—A hive of 5000 bees produces about 50 lbs. of honey yearly, and multiplies tenfold in 5 years. The ordinary value of a hive in Europe is £1 sterling. Bees cat 20 lbs. honey in making a pound of wax.

### BEET-ROOT—BENEFICES

46

			Hives,	Million Ibe. Honey.
France .			950,000	23
Germany			1.454,000	40
Russia .			110,000	2
Austria .			1,550,000	40
Belgium .	•		200,000	5
Holland .			240,000	6
Denmark			90,000	2
Greece .			30,000	8
United Sta	ates .	•	2,800,000	62
Total	•		7,424,000	183

The largest bee-owner in the world is Mr. Harbison of California, who has 6000 hives, producing 200,000 lbs. honey yearly, worth £8000. There are in the United States 70,000 bee-growers, but the average which they get from their hives is only 22 lbs., whereas the average in England is 50 lbs., and some hives have given as high as 120 lbs.

BEET-ROOT.—The production in 1882 was as follows:—

		Bect-root, Million tons.	Beet sugar, Thousand tous.
France .		9	890
Germany .		12	606
Russia .		4	240
Austria .		8	460
Holland, &c	 •	2	115
Total .		<del></del> 85	1,811

The crop ranges from 5 tons of roots per acre in Russia, to 9 tons in Germany. In England it has given 12 tons per acre, equivalent for cattle-food to 4 tons of hay, and worth 16 shillings per ton, but it has been found too costly in cultivation. Experimental growing in Canada has proved most successful. It takes about 14 tons of roots in Europe generally per ton of beet sugar, the average of saccharine matter being 7 per cent. as compared with 4 per cent. twenty years ago.

**BELLS.**—The largest are the following:—

Tons.	Tons.			Tons,
Moscow 202	Rouen 18	Montreal .		12
Burmah 117	Olmutz 18	Cologne .		
Pekin 53	Vienna 18	Oxford		8
Novgorod 31	St. Paul's 16	St. Peter's		8
Notre Dame 18	Westmineter 14		•	•

Bell-metal should have 77 parts copper, and 23 tin.

BENEFICES. - See Church.

BEQUESTS.—The annual average of sums left in charity in Great Britain, France, and Italy, compared with the amount of proved assets, shows thus:—

		Bequests.	Per £1000 of Assets.	Per Death of Population,
United Kingdom		£650,000	£4	19 shillings
France	•	1,190,000	6	27 "
Italy		124,000	2	3 "

The income of endowed charities in England has risen from £1,520,000 in 1840 to £2,550,000 in 1881. The number of testators in France leaving charities averages 4200 per annum, and the amount left by each £290. See Charities, Hospitals.

BIBLE.—No fewer than 1326 editions of the Bible were published in the 16th century. In the 17th and 18th centuries it was translated and published in many languages by the polyglot press of Propaganda Fide at Rome. In the 19th century the English and American societies have printed, in the Protestant version, 124 million copies of the Bible or of the New Testament, viz:—British, 74 million; American, 32 million; other societies, 15 million copies.

BICYCLE.—The fastest trips on record are:—Tunbridge to Liverpool, 234 miles, 18½ hours; London to John o' Groat's, 800 miles, 14 days. A tricycle has run 10 miles in 42 minutes.

In 1882 there were 9800 bicycle riders in London, and 96,000 in England and Wales. The maxima of speed obtained up to the present has been:—

Miles.	Hours.	Mimites.	Miles.	Hours.	Minutes.
10	0	34	50	3	10
20	1	12	80	5	47
40	2	32	100	7	34

BILLS OF EXCHANGE.—The current amount in Great Britain has been:—

Үсаг.	Millions &	Ratio to Commerce.	Year.	Millions £.	Ratio to Commerce.
1830	96	100	1860	300	93
1840	125	102	1870	400	85
1850	175	105	1880	500	90

The discounts are estimated as follows:—

	Billium &.
English banks	. 235
Scotch banks	. 65
Irish and Colonial banks	. 55
Private discounters .	. 145
	500

500

The discounts in the United States in 1879 comprised 3,200,000 bills for 700 millions sterling, say £220 each. In France the average is £43 per bill. See Banks.

BILLS OF SALE.—The average number in England and Wales during the years 1879-81 was 52,900.

# BIRDS, FLIGHT OF.

		P	Miles or Hour.				De	Miles r Hour,	
Hawk .	•	•	150	Rook	•	•	•	60	
Eider-duck	•	•	90	Pigeon	•	•	•	40	
See <i>Carrier-Pi</i>	aeon	8.							

BIRD'S-NESTS, for soup, in China. There are 9 million imported yearly into Canton, value 10 shillings per ounce, about 50 weighing 1 lb.

#### BIRTHS.

# A .-- Numbers in All Countries (1880).

			Daily.	One Year.	Excess over Deaths.
England .			2,441	880,520	852,460
Scotland .		•	842	124,652	48,850
Ireland	•	•	853	128,010	25,055
United K	ingdon	ı .	3,136	1,133,182	426,365
France	•		2,561	936,000	97,000
Germany .			4,750	1,736,000	592,000
Russia			8,525	3,116,000	779,000
Austria			2,328	1,486,000	324,000
Italy			2,910	1,064,000	228,000
Spain			1,620	592,000	115,000
Portugal .			407	150,000	80,000
Holland .			391	. 144,000	49,000
Belgium .			471	172,000	48,600
Denmark .			171	62,500	24,000
Sweden			380	139,000	62,000
Norway			158	58,000	29,000
Switzerland .			236	86,000	20,500
Greece			195	72,000	17,000
Roumania .	•	•	495	180,000	40,000
Europe .			30,734	11,126,682	2,881,465
United States			5,750	2,100,000	950,000
Canada	•	•	384	140,000	60,000
Australia .	•	•	801	109,000	66,000
Total .	•		37,169	13,475,682	3,957,465

# B.—BIRTH-BATE PER 1000 INHABITANTS.

			1861-70.	1871-80.	1861 80.
United Kingd	lom .		33.4	34.3	33.8
•••		.	26.5	25.6	26.1
Germany .		.	39.8	39.8	89.8
Austria			39-9	39-9	89-9
Hungary .		. 1	42.2	43.0	42.6
Holland .			34.6	36-2	35.4
Belgium .			<b>81</b> ·2	32-2	81.7
Denmark .		.	31·2 ·	31.2	81.2
Sweden		.	<b>32·1</b>	80 3	31.2
Italy		.	<b>37</b> ·5	36·9	37.2
Spain		.	87.2	37.2	37.2
Australia .			89.0	36.0	37.5

In the above table, where both decades have the same rate, it indicates want of returns before 1870.

# C .- Births according to Months (100 par).

	France.	Germany.	Spain.	Italy.
January	. 105	103	114	107
February	.   111	105	108	114
March	. 109	103	112	110
April	. 106	100	102	106
May	. 99	97	100	95
June	.   95	95	89	89
July	. 96	96	88	91
August	. 96	98	91	93
September .	. 97	106	98	100
October	. 95	100	100	99
November	. 97	100	97	98
December	. 95	99	100	97

# PERCENTAGE OF BIRTHS ACCORDING TO SEASONS.

Quarter Ending	England.	France.	Germany.	Sweden.	Italy.	St. Peters- burg.
March	26-2	27.0	25.9	26.8	27.5	25.6
June	26.0	24.9	24.2	23.8	24.1	26.0
September.	24.0	24.0	25.0	23.7	23.7	24.7
December .	23.8	24.1	24.9	25.7	24.7	23.7
Total .	100.0	100.0	100.0	100.0	100.0	100.0

## D.-Births to Each Marriage.

		1861-70.	1871-80.	Difference.
England		3-98	4.16	+ 0.18
Scotland	.	4.51	4.43	- 0 08
Ireland	.	4.95	5.46	+ 0.51
United Kingdom	.	4.18	4.33	+ 0.12
France	.	8.09	2.98	- 0.11
Belgium	.	3.95	4.21	+ 0.26
Holland	. 1	4.09	4.84	+ 0.25
Denmark	. 1	3.64	3.55	- 0 09
Sweden		4-27	4.01	- 0.26

The greatest increase of fertility is in Ireland, the greatest decline in Sweden.

#### E .- Twins and Triplets.

	Per Thous	and Births.		F	er Thou	and Births.
	Twins.	Triplets.		•	Twins.	Triplets.
England.	. 11.2		Switzerland		12.0	•••
Scotland	. 11.7		Spain .		8.4	•••
Ireland .	. 17.6		Belgium.		9.1	0.10
France .	. 10.1	0.12	Holland .		12.8	•••
Germany	. 12.9	0.13	Denmark		13.7	0.24
Russia .	. 12.1		Sweden .		13.6	0.18
Austria .	. 13.4	0.18	Norway .		11.8	0.12
Italy .	. 11.8	0.14	Iceland .		14.2	0.33

Twins give 108 males to 100 females, and triplets show a medium result for France, Germany, and Austria, as follows:—

Birth of 3 boys .			26-0
" 3 girls .		•	22.7
Two boys and a girl			27.0
Two girls and a boy		•	24 3
			100:0

This gives 156 boys and 144 girls, that is, precisely the same ratio as in the case of twins.

# F.—Declining Ratio of French Births.

Period.	Per Marr'age.	Period.	Per Marriage.
1800-30	3:82	1861-70	3·09
1831-60	3:20	1871-80	2·98
1831- <b>60</b>	3.20	1871-80	298

# G.—RATIO OF SEXES, BASTARDY, &c.

		Per 100	00 Births.	
	Male.	Female.	Illegitimate.	Still-born
England	511	489	45	•••
Scotland	514	486	89	•••
Ireland	515	485	23	•••
United Kingdom	512	488	47	
France	513	487	76	46
Germany	514	486	84	41
Russia	508	492	31	
Austria.	516	484	129	25
Italy	517	483	68	31
Spain	516	484	55	
Portugal	515	485	56	
Holland	513	487	35	43
Belgium	514	486	70	45
Denmark	513	487	112	30
Sweden	512	488	102	29
Norway	514	486	85	35
Switzerland .	512	488	46	44
Greece	519	481	16	
Roumania	521	479		
Europe	513	487	52	•••

The ratio of illegitimacy is falling in England; rising in France and Sweden.

# H.—BIRTH-RATE IN CITIES, PER 1000 INHABITANTS.

Alexandria .	450	Edinburgh.	32.2	Norwich	33.6
Amsterdam .	36.7	Geneva	24.3	Nottingham .	36.7
Barcelona .	29.2	Glasgow .	37.4	Oldham	35.4
Berlin	37.5	Hague	39.7	Paris	30.5
Birmingham	37.6	Hamburg .	37.5	Philadelphia .	36.0
Bombay	25· <b>6</b>	Havanna .	25.4	Plymouth	32.7
Boston	30-0	Hull	36.4	Portsmouth	34.4
Bradford	33.1	Leeds	36.8	Rio Janeiro	35·5
Breslau	37.7	Leicester .	38.4	Rome	27.2
Brighton	30· <b>6</b>	Liverpool .	37.6	Rotterdam	38.8
Bristol	34.5	London	34.7	St. Louis	30.0
Brussels	34.7	Lyons	26.0	St. Petersburg .	37.8
Bucharest .	29.5	Madras	39.0	Sheffield	38.0
Buda-Pesth .	35.8	Madrid	37.5	Stockholm	33.0
Buenos Ayres	31.7	Manchester	36.9	Sunderland	39.3
Christiania .	34.2	Munich	39.5	Turin	31.5
Copenhagen.	39.1	Naples	32.0	Venice	30.5
Dresden	35.4	Newcastle .	36.8	Vienna	39.2
Dublin	29.1	New York.	39.4	Wolverhampton	35.9

# L-Births in United Kingdom, 1861-80.

	Numi	Number, Thousands.			Rate per 1000 Inhabitant			
	1861-70.	1871-80.	1861-80.	1861-70.	1871-80.	1861-80		
England	7,500	8,588	16,088	85.70	35.80	8575		
Scotland	1,121	1,233	2.854	85.70	35-20	35.45		
Ireland	1,468	1,402		26.10	26.20	26-30		
United Kingdom.	10,089	11,223	21,812	88.40	84.30	<b>33</b> ·85		

Families living in the country have 8 per cent. more children than those in towns. Old families have a marked tendency to die out in England, Italy, and Prussia, probably because of intermarriage with cousins. Among Jews there are 116 males born for 100 females: their ratio of illegitimacy is the lowest in the world, barely 2 per cent. After a destructive war the births of males predominate in a surprising manner.

#### **BISHOPS**

# A.—ROMAN CATHOLIC BISHOPS.

		Δı	ch bishops.	Bishops.	Total
United Kingdom			7	42	49
France			17	69	86
Germany			5	23	28
Russia			2	13	15
Austria			19 •	51	70
Italy			50	218	268
Spain			9	45	54
Portugal			8	15	18
Belgium and Hollan	d		2	10	12
Switzerland .			•••	6	6
Greece			3	6	9
Turkey	•		8	12	15
Europe .	•	•	120	510	630
United States .	•	•	12	52	64
Spanish America			16	79	95
British America			5	25	30
Australia			2	16	18
India		•	2 .	22	24
Armenia, Persia, &c.			27	47	74
Various missions	•	•	•••	328	328
Total .			184	1,079	1,263

## B.—PROTESTANT BISHOPS OF BRITISH EMPIRE.

Parland				A	chhishops.	Bist ops. 30	To'al. 82
England	•	•	•	•	4	3U	7
Scotland	•	•	•	•	•••	7	•
Ireland				•	2	10	12
Colonies	•	•	•	•	•••	73	78
Total	1.				4	120	124
	• •	•	•	•	-		

The income of English bishops ranges from £3000 upwards, the Archbishop of Canterbury having £15,000 a year. See Churches.

RISON.—Between 1860 and 1882 more than 15 millions were killed in the United States.

**BLACKING.**—For boots. The consumption in England in 1880 amounted to a value of £560,000.

**BLASTING.**—The South-Eastern Railway Company, at Dover, removed at one blast 400,000 cubic yards of the cliff with 8 tons of powder in 3 charges. Nitro-glycerine is now used, having 5½ times the force of powder. See *Explosives*.

#### BLIND.

					Number.	Per 100,000 Inhabitants.
England					24,720	95
Scotland	-				3,240	91
Ireland	•	•		•	5,936	111
United	King	dom			33,896	97
France					28,491	74
Germany					26,170	58
Austria					32,336	85
Switzerlau	nd				2,640	95
Italy .					28,100	99
Spain					85,290	216
Belgium	-		-		4.182	76
Holland	-				2,410	61
Sweden				·	4.120	91
Norway					3,730	208
Denmark	•	•	•	•	2,450	126
Europe					203,815	91
United St	ates				48,930	97
To	tal	•	٠	•	252,745	81

The probable causes in those countries with a high ratio are—in Norway snow, in Ireland smoky hovels, in Spain dusty plains and want of trees. The ordinary ratio of sex is 11 blind males to 9 females. The French returns show

18 per cent. born blind, and 82 per cent. the result of accident or sickness.

#### BLOOD.

A.—Elem	ENT	S OF	$\mathbf{H}_{i}$	NAMU	Brood.	
Water.				Mar 77:		Woman. 79.6
Albumen		:	:	6	2 .	6.4
Colour	•	•	•	14:	-	12·2 1·8
Saline, &c.	•	•	•		_	
				100	0	100.0

# B.—Temperature, Fahrenheit.

Glowworm	ı		74	Elephant		991	Monkey .		1041
Snail			76	Porpoise		100	Sheep .		104¥
Shark			77	Bat		100	Hog		105
Oyster.			82	Rat		102	Jackdaw		107
Serpent .			881	Cat		102	Sparrow.		108
Man			98ī	0x		102	Pigeon .		1091
Horse			99i	Elk		103	Chicken .		

# C.—Iron in Blood.

		Grammes per Ton.	Oz. per   Cwt.			Grammes per Ton.	Oz. per Cwt.	
Man		. 510	0.91	Pig		. 590	1.06	
Ox	•	. 560	1.00	Frog	•	. 420	0.75	

BODY, GROWTH OF.—Danson's tables of male prisoners in English gaols in 1858 and 1878 give the following:—

	Height	, inches.	Weigh	Weight, Ibe.			
Age.	1858.	1878.	1858.	1878.			
Ĭ8	64.3	64·1	122	125			
20	65-2	65·1	133	137			
22	66.2	65 <b>·7</b>	139	142			
24	65-9	65.4	142	141			
26	66.2	65.6	142	143			
28	66.7	65.7	143	144			
30	66.4	65· <b>5</b>	142	144			

#### See Anthropometry.

BOOKS.—About 100 new works are published daily, or 30,000 per annum, without counting new editions of old works.

# A .- Annual Average of New Books.

Great Britain		1828 32, 1,060	1866 <b>69.</b> 3,220	1878- <b>90.</b> 5,771
France .		4,640	7,350	7,000
Germany .		5,530	9,095	14,560
United States		1,013	2,165	2,500
Total	_	12.943	21.830	99 831

The annual book-fair at Leipzig disposes of 8000 tons of books, valued at £1,600,000.

The average edition of a book being 1000 copies, it appears that the above four countries print 30 million volumes yearly.

# B.—Books in the United Kingdom, Issued in 1880.

Theology			708	Travels		211
Classics			507	Economy		204
Fiction			380	Medicine		148
Arts .	•		362	Poetry		182
History			<b>286</b>	Sundry		1,355

In 1870 Great Britain exported books to the value of £631,000, and in 1880 of £970,000.

BOOTS.—The American machine enables a man to make 300 pairs of boots daily, a single factory in Massachusetts turning out as many pairs yearly as 32,000 bootmakers in Paris. The advance of these machines has been as follows:—

Year.	No. of Machines.	Million Pairs Boots Yearly.
1862	15	<u> </u>
1865	470	15
1870	1,220	45
1875	2,300	100
1880	3,100	150

The Austrian Government makes 2 million pairs yearly. These machines are now in general use. The number of bootmakers in Great Britain is rapidly declining; in 1861 one for 103 inhabitants, and in 1871 for 126 inhabitants.

#### BORING.—See Diamond-drill.

BOUNTIES.—Between the years 1690 and 1830 Great Britain paid the inhabitants of Belfast and Dundee 28 millions sterling to enable them to sell and export Irish and Scotch linen at less than cost. The export of linen has quadrupled since the bounties were abolished in 1830, the average bounty before that year having been £150,000 per annum. Bounties on the exportation of grain, in England, averaged £160,000 per annum for some years, until their abolition in 1805. Sugar bounties prevail on the Continent, the annual average being £600,000 in France, £170,000 in Belgium, and £150,000 in Holland. The new shipping bounties in France (1880) are as follows:—48 shillings per ton for building iron vessels, and 16 shillings for wooden;

15 pence per ton per 1000 miles run, on French-built vessels entering French ports;  $7\frac{1}{2}$  pence per ton for French vessels not built in France. The amount paid in 1881 for these shipping bounties was £400,000: the increase of French tonnage entries in French ports 20,000 tons, say £20,000 earned for freight, or one-twentieth of the bounties.

**BRAIN.**—The latest classification of races, according to Bastian and other experts, shows weight of brain as follow:—

				Os.	1				Or.
Scotch .				50∙0	Pawnees				47:1
Germans				49.6	Italians				46.9
English				49.5	Hindoo.				45.1
French .				47 .9	<b>Gурау</b> .		•		44.8
Zulus .			•	47.5	Bushmen		•		44.6
Chinese	•	•	•	47 ·2	<b>Es</b> quimaux	•	•	•	43.9

Compared with size of body, the brain of the Esquimaux is as heavy as the Scotchman's.

The measurement of that part of the skull which holds the brain is stated in cubic inches thus:—

Anglo-Saxon	١.	•		105	Ancient Egyptian .	93	
German		•		105	Hottentot	. 58	
Negro .	•	•	•	96	Australian native .	. 58	

In all races the male brain is about 10 per cent. heavier than the female. The highest class of apes has only 16 oz. of brain.

After the age of 50 the brain loses an ounce every 10 years. Cuvier's weighed 64, Byron's 79, and Cromwell's 90 ounces, but the last was diseased. Post-mortem examinations in France give an average of 55 to 60 ounces for the brains of the worst class of criminals.

**BREAD.**—The analysis of bread gives conflicting results, the following being taken from respectable sources:—

Nitrogen				6.8	В. 8·1	12. <b>6</b>
Nitrogen	•	•	•			
Water	•	•	•	43.0	<b>37·0</b>	14.6
Starch	•		•	44.0	47:4	65·6
Sugar				3.4	3.6	4.8
Fat .				1.8	1.2	1.4
Mineral	•	•	•	1.5	2.4	1.0
				100.0	100-0	100.0

In 1862 the bread supplied to the French army was found

superior in nitrogen to that of other Continental armies, as follows, French being 100:—

Prussian		50	1	Austrian		70	1	Belgian		91
Spanish	•	69	1	Dutch.	•	80	1	Italian	•	96

A sack of flour, containing 280 lbs., will make 368 lbs. of bread in England, and 420 lbs. in United States, that is, 7 lbs. of American are equal to 8 lbs. of English flour. The ingredients for 368 lbs. of English bread are:—280 lbs. flour, 3 gallons water, half gallon yeast, half gallon alum, and 4 lb. salt.

The consumption is as follows:—

	Pounds Bread Weekly per Inhabitant.	Pounds Bread Weekly per Inhabitant
United Kingdom	. 6.3	Spain 7.0
France	. 7.7	Low Countries 7.5
Germany	. 8.2	Denmark 7.6
Russia	. 8.4	Sweden and Norway 6.5
Austria	. 8.0	United States 7.5
Italy	. 6.1	General average . 8.0

The agricultural peasantry of the United Kingdom consume of breadstuffs (says the *Food Journal*) as follows per week:—England, 12 lbs.; Scotland, 13 lbs.; Ireland, 20 lbs. See *Food*.

#### BREAKWATER.

Name.	Date.	Yards Long.	Cost.	Builder.
Plymouth	1812-41	1,720	£1,550,000	Rennie.
Cherbourg	1784-1857	4,100	3,200,000	•••
Delaware		1,200	•••	•••
Alexandria	1873-76	2,000	2,550,000	Greenway.

The Plymouth breakwater has the same quantity of stone, 3,800,000 tons, as the great pyramid of Cheops, and encloses 1120 acres of harbour; Cherbourg, 1927 acres; and Delaware, 420 acres. See *Docks*, *Barrages*.

BRICKS.—The consumption in the United Kingdom is about 3 milliards a year, or 250 millions monthly, and in the United States 600 millions monthly. That is, each inhabitant of Great Britain uses 90, and of the United States, 130 bricks yearly. The following table shows the consumption in Great Britain (without Ireland) during 60 years:—

# ANNUAL AVERAGE

Years.	Million Bricks.	Houses Built.	Bricks per Inhabitant,
1821-30	1,210	40,200	78
1831-40	1,530	56,200	90
1841-50	1,662	89,100	85
1851-60	1,884	49,100	86
1861 <b>–70</b>	2,070	53,300	84
1871-80	2,490	80,300	90

English bricks measure  $9 \times 4\frac{1}{2} \times 3$  inches, and weigh 8 lbs., or 3 tons per 1000. An Adams or Liddell machine, 16-horse power, can make 30,000 daily, the average of handmade bricks per moulder being 4000 a day. Fire-bricks will resist a crushing force varying from 600 up to 3000 lbs. per square inch. See *Houses*.

#### BRIDGES.

# A.—HISTORICAL BRIDGES.

Name.		Leng	th (Feet).	Date.	Over.
Ratisbon			994	1135	Danube.
St. Esprit .		. 2,	690	1285	Rhone.
Cordoba			460	1301	Guadalquivir.
Verona			365	1354	Po.
Rialto			99	1588	At Venice.
Prague		. 1.	70 <b>6</b>	1650	Moldau.
Schaffhausen			364	1758	Rhine.
Neuilly		•	740	1768	Seine.

# B.—BRIDGES OF GREAT HEIGHT.

Name.	Height (Feet).	Span (Feet).	Name.	Height (Feet).	Spin (Fret)
Bristol .	. 257	703	Brooklyn	. 210	1,620
Niagara.	. 190	1.190	Annecy .	. 656	636

Brooklyn bridge was 13 years in construction, and weighs 34,000 tons: there are 4 cables, each of 5000 wires of one-eighth inch. Carriage-ways 85 feet, including railway lines.

Forth bridge (Scotland) has superstructure 42,000 tons steel; main girder, 5330 feet; total length, 8100 feet; heaviest train deflection, 4 inches; estimated cost, £1,500,000.

BRIDGES.

Bullder.		Darby.	Wilson	Rennie	Telford,	Stephenson.	Stephenson.	Roebling.	Stephenson.	. :	:	Roebling.	:	Eade	:	Eiffel.	:	:	:		Beleloubaki,		Roebling.
Control		:	£27.000	800,000	212,000	248,000	602,000	83,000	1,700,000	:	100,000	:	<b>40,000</b>	400,000	650,000	:	:	550,000	:	:	695,000	425,000	3,100,000
Ton		878	260	6.780	2,187	5,050	009'6	8	8,230	2,000	8,100	:	:	4,200	:	1,600	:	6,650	:	:	5,150	. :	10,000
Length (Foot)		18	236	8	1,050	8	1,511	820	7,200	1,900	1,095	2,252	1,270	2,200	008'6	1,160	5,120	6,000	4,850	8,550	4,872	8,000	6,000
Over,		Severn	Wear	Thames	Menai Straits	Tyne	Menai Straits	Niagara	St. Lawrence	Danube	Sarine	Ohio	Niagara	Mississippi	Punjaub	Douro	Solway	Sutlei	Maas	Dnieper	Volga.	Ganges	Hudson
; Bridge.		Coslbrookdale	Sunderland	Southwark	Menai	Newcastle	Britannia	Niagara	Victoria	Pesth-Buda	Freyburg	Cincinnati	Clifton	St. Louis	Wuzerabad	Oporto	Annan	Empress	Moerdyk	Pultowa	Saratov	Benares	Brooklyn
Date	1	1779	1796	1819	1825	1849	1850	1855	1859	1860	1862	1867	1868	1874	1875	1877	1878	1879	1880	1880	1881	1882	1883

A bridge surpassing any of the above is proposed at Rio Janeiro, length 16,000 feet, and to cost £1,600,000,

connecting that city with Nitherhoy, and resting on an intermediate island. Iron bridges cost from £100 upwards per lineal foot. In 1816 Captain Brown built an iron bridge of 112 feet, only for foot passengers, at Galashiels, for the sum of £40, the cheapest bridge on record. Suspension bridges have been been used in China since the time of the Emperor Ming, 2000 years ago: they were made of iron chains.

## D.—Bridges of London.

Name.	Length (Feet).	Cost.	Per Foot,	Date,
London	900	£2,000,000	£2,200	1831
Southwark	800	800,000	1,000	1819
Waterloo	1,326	1,060,000	800	1817
Blackfriars .	1,000	270,000	270	1869
Charing Cross	1,365	180,000	130	
Westminster .	1,220	480,000	890	1862
Vauxhall	806	412,000	500	1816
Hammersmith	480	80,000	170	1827
Total	7,897	£5,412,000	£680	

#### E.—Bridges in France.

Years. 1814-30		Cost. £13,500,000	Per Annum. £800.000
1831-47		22,500,000	1,830,000
1848-70		40,200,000	1,800,000
56 years		£76,200,000	£1.350.000

The quickest bridge ever built was by Mr. Dredge, in 1846, who in 8 days placed an iron bridge, 74 feet span, across the Blackwater, Co. Tyrone, Ireland. The greatest number of bridges built by one man was by Mr. Telford, surnamed Pontifex, who erected 1200 bridges in Scotland, between the years 1800 and 1820.

#### BUILDINGS.

# A.—HISTORICAL.

Name.			Locality.	Date.				
Parthenon			Athens .		B.C.	438		
Pantheon			Rome		A.D.	13		
Coliseum			Rome		**	70		
St. Sophia			Constantinople	э.	**	532		
Mosque of C	mar		Jerusalem .	•	**	637		
Escurial .	•		Castile .		17	1570		
St. Peter's	•		Rome		19	1626		
St. Paul's		•	London .		17	1710		

B.—Modern.
Place.
Westminster

Name.			Place.				Cost.
Houses of Parl	iament		Westmins	ster			£3,500,000
Cathedral .			Cologne	•			2,100,000
Law Courts .		•	London	•			950,000
Post Office .		•	Paris .				1,200,000
Opera House .		_	Paris .				1,600,000
Hotel de Ville			Paris .	•			1,600,000
Palais de Justi		•	Brussels	•	•	•	1,200,000

# C.—Arches.

				Breadth (Feet).	Height (Feet).
Westminster Abbey				33	99
St. Paul's, London	•	•		41	82
Amiens Cathedral				42	147
Milan		:	•	55	165
St. Peter's, Rome				84	147

#### D.—Domes.

		(Feet).	(Feet).
Pantheon, Paris .		67	190
Invalides,		80	173
Achmet's Mosque		92	120
Caracalla's Baths		112	116
St. Paul's, London		112	215
St. Sophia, Constantinople	е.	115	201
Santa Maria, Florence		139	310
St. Peter's, Rome		139	330
Pantheon, ,,		142	143

See Churches, Pyramids.

BUILDING SOCIETIES.—There are 1267 societies in England and Wales, with 372,000 members; assets, 37 millions sterling. See Friendly Societies.

# BULLET, VELOCITY OF.

,		Grains, Powder.	Velocity, Feet per Second		
Smooth-bores.		. 110	1,500		
Rifle '		. 60	963		

BULL-FIGHTING. -In 1866 the balance-sheet of 99 bull-rings then in Spain contained the following items:-

Bulls killed .		No. 2.375	Cost. £61.000	Average. £26
Horses " .		3,561	70,000	20
Bull-rings, rent	•	99	130,000	1,310
Total			£261 000	

The number of bull-rings in 1878 was still the same. The above does not include the pay of Matadores, Bandilleros, &c.

**BULLION.**—The movement of precious metals over sea since 1860 has been as follows:—

			Goud, M	irrio <b>xs</b>	L	
	Imp	orts.	Exp	orts.	Net Imports.	Net Exports.
	1861-70.	1871-80.	1861-70.	1871-80.	1861-80.	1861-80.
Great Britain	171	180	112	172	67	
France	189	151	119	90	131	
United States	31	42	113	74	l	114
Australia	9	5	108	76		170
Other countries .	112	126	60	92	86	
Total	512	504	512	504		
	SILVE	r, Mill	ions £			
Great Britain	93	132	91	119	15	
France	92	111	78	48	77	•••
United States	12	18	22	73	•••	65
Spanish-America .	2	2	74	68	•••	138
India and China	233	126	4	5	350	
Other countries .	12	13	175	89	•••	239
Total	444	402	444	402		
	Тотац	, Mill	ions £.			
Great Britain	264	312	203	291	82	
France	281	262	197	138	208	•••
United States	43	60	135	147	•••	179
Australia	9	5	108	76	•••	170
Spanish-America .	2	2	74	68	•••	138
India and China .	233	126	4	5	350	
Other countries .	124	139	235	181		239
Grand total .	956	906	956	906		

During the first decade the interchange of precious metals was equal to 12 per cent., during the second to 8 per cent., of the commerce—that is, of the sea-borne merchandise—of the world. This is due to telegraphs and the use of cheques. See Gold, Silver, Money.

BURIAL.—The ordinary depth of graves is :-

England		5 ft. 0 in.	Germany		6 ft. 3 in.
France	•	5,,6,,	Russia	•	6 ,, 10 🗩
Austria		60	l .		

See Cemeteries, Funerals.

BURNT.—The number of lives lost by fire in England and Wales in 1878 was 619 males, and 859 females, without counting deaths from explosions or scalds—that is, 27 per 10,000 deaths of the population, or one in 360. See Deaths.

#### BUTTER.

	Production, Tons.	Lbs, per Milch Cow.	Consumption, Tons.	Lbs. per Inhab.
United Kingdom .	90,000	50	205,000	18
France	90,000	45	65,000	4
Germany	160,000	55	160,000	8
Russia	90,000	20	86,000	
Austria	88,000	38	88,000	2 5
Italy	12,000	17	12,000	1
Holland	46,000	175	10,000	6
Belgium	20,000	90	15,000	6
Scandinavia	55,000	68	40,000	11
Europe	651,000	48	681,000	5
United States	870,000	62	850,000	16
Canada	84,000	70	24,000	12
Total	1,055,000	55	1,055,000	7

The average product of a milch cow in England, in milk, butter, &c., is about £11, as compared with £15 in Holland.

The price of butter in London since 1730 has been:—

		Pence.	1		Pence.
1730-1790		52	1841-1860		121
1791-1815		13	1861-1880		16
1816-1840		91	1881-1883		18

The various kinds of butter gives the following analyses:-

	Fat.	Water.	Various.	Total.	Ratio of Caseina
Devonshire.	82.7	16.2	1.1	100.0	16.2
Norman .	82-4	12.6	5.0	100.0	10.6
London .	47.1	42.4	10.5	100.0	7.8
,, .	67.5	24.0	8.5	100.0	6.9
Isle of Wight	86 3	<b>3</b> ·8	99	100.0	8.3
Jerney .	78·5	10.4	11.1	1000	2.5
Oleomargarine	86.0	10.0	4.0	100.0	0.8

An English cow giving 1800 quarts milk per annum produces 140 lbs. butter, consuming 4 tons hay, which contain 168 lbs. fat. See Coucs.

#### CABLES—CALENDAR.

# C

**CABLES.**—For shipping, see Anchors: telegraphic, see Telegraphs.

CABS.—There are 9700 in London, and 5500 in Paris: the former average 80,000, the latter 50,000, passengers daily. The medium fare earned per passenger is 15 pence in Paris, 18 pence in London. The earnings in London per cab are 19 shillings a day in "the season," 9 the rest of the year, or 12 shillings all the year round. Of all males who die in England, one in 260 is killed by a cab or other vehicle, and of all females one in 2550. The ratio of these deaths to the general mortality is as follows:—

		r 10,000 eaths.			r 10,000 baths	
Birmingham		12	Manchester	•	24	
Sheffield .		17	Dublin.		33	
Glasgow .		19	London		37	
Liverpool .		21	Leeds .		79	

The value of articles left in cabs in London, and handed over to the police at Scotland Yard, averages £21,000 per annum.

The cost of cabs in Paris to their owners averages 4 francs a day for the driver and 2 francs for the maintenance of each horse, say 5 shillings a day for one-horse cabs. See Conveyances.

**CALENDAR.**—1. Jewish, 383 days: the Jewish year 5644 begins on October 2, 1883.

- 2. Julius Cæsar's, 365 days, B.C. 46, commenced in March.
- 3. Mahometan, 355 days, A.D. 622: the Mahometan year 1300 began March 1, 1883.
  - 4. Charles IX., A.D. 1564, commenced 1st January.
- 5. Pope Gregory XIII., A.D. 1582; now used except in Russia.
- 6. The Russian year begins on January 13 of our calendar. The Gregorian calendar was adopted in England in 1752, before which date the year began on March 25, which would now be April 5.

For the purpose of finding the day of the week of any event the student will be facilitated by knowing the day on which the year began. The following table shows for 280 years past the day of the week on which the 1st of January fell:—

# CALENDAR.

Sunday	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturde
•••		·		1601	1602	1603
1604	l	1605	1606	1607	1608	
1609	1610	1611	1612		1613	1614
1615	1616		1617	1618	1619	1620
	1621	1622	1623	1624		1625
1626	1627	1628	1	1629	1630	1631
1632		1633	1634	1635	1636	l
1637	1638	1639	1640	I I	1641	1642
1643	1644		1645	1646	1647	1648
	1649	1650	1651	1652	104/	1653
1654	1655	1656		1657	1658	1659
1660	I	1661	1 200			
1665	1000		1662	1663	1664	1070
	1666	1667	1668	1	1669	1670
1671	1672	1000	1673	1674	1675	1676
	1677	1678	1679	1680		1681
1682	1683	1684		1685	1686	1687
1688	1	1689	1690	1691	1692	-::-
1693	1694	1695	1696	1 .::. 1	1697	1698
1699	1700	.::.	1701	1702	1703	1704
	1705	1706	1707	1708	• • •	1709
1710	1711	1712		1713	1714	1715
1716		1717	1718	1719	1720	
1721	1722	1723	1724	1	1725	1726
1727	1728		1729	1730	1731	1732
	1733	1734	1735	1736		1737
1738	1739	1740		1741	1742	1743
1744	l	1745	1746	1747	1748	
1749	1750	1751	1752		•••	
	1753*	1754	1755	1756	•••	1757
1758	1759	1760		1761	1762	1763
1764		17:5	1766	1767	1768	
1769	1770	1771	1772		1773	1774
1775	1776	1	1777	1778	1779	1780
	1781	1782	1783	1784		1785
1786	1787	1788	1,00	1789	1790	1791
1792		1793	1794	1795	1796	1181
1797	1798	1799	1800	1801	1802	1803
1504	1 1,00	1805	1806	1807	1802	l
1809	1810	1811	1812	1	1813	1914
1815	1816		1817	1910		1814
	1821	1822		1818	1819	1820
1826	1827	1828	1823	1824	1000	1825
			1 2004	1829	1830	1831
1832	1690	1833	1834	1835	1836	1
1837	1838	1839	1840 .	1	1841	1842
1843	1844	3050	1845	1846	1847	1848
	1849	1850	1851	1852		1853
1554	1855	1856	l .::.	1857	1858	1859
1560		1861	1862	1863	1864	٠
1565	1866	1867	1868		1869	1870

In connection with the preceding calendar, it will be easy by means of the following table to find the day of the week of any event:—

January			1	8	15	22	29
February	•	•	5	12	19	26	•••
March .			5	12	19	26	•••
April .			2	9	16	23	30
May .			7	14	21	28	•••
June .		•	4	11	18	25	•••
July .		•	2	9	16	23	30
August			6	13	20	27	•••
September			3	10	17	24	•••
October			1	8	15	22	29
November			5	12	19	26	•••
December			3	10	17	24	31

Allowance must be made for February 29 in leap-years, which were those preceding the blank spaces in the previous calendar.

CAMELS.—A camel has twice the carrying power of an ox; with an ordinary load of 400 lbs. he can travel 12 or 14 days without water, going 40 miles a day. They are fit to work at 5 years old, but their strength begins to decline at 25, although they live usually till 40. They are often fattened at 30 for the butcher, the flesh tasting like beef. The Tartars have herds of these animals, often 1000 belonging to one family. They were numerous in antiquity, for the patriarch Job had 3000. The Timbuctoo or Meharri breed is remarkable for speed, and used only for couriers, going 800 miles in 8 days, with a meal of dates or grain at nightfall. Napoleon conveyed 1500 infantry on camels across the desert from Cairo to St. Jean d'Acre.

Camel, in engineering, signifies an instrument invented by the Dutch for floating vessels over sand-banks. The vessels sunk at Sebastopol in 1854 were removed after the war by means of Colonel Gower's camels, which had a lifting power of 5000 tons.

CANAL-TRAFFIC.—The yearly average per mile is in tons:—

Germany	, 6,000	England,	8,800	United	States,	10,000
France,		Russia,				60,000

# CANALS.

# A.—Canals and Navigable Rivers.

			MILES.		Per 100
	1	Canals.	Rivers.	Total.	Miles.
United Kingdom .	1	3,124	1,786	4,910	4
France		3,150	5,240	8,390	4
Germany		1,320	15,760	17,080	8
Russia		873	20,942	21,815	1
Austria		413	2,925	3,338	1
Italy		320	1,590	1,910	2
Spain		- 270	815	1,085	1
Portugal			470	470	11
Belgium		535	710	1,245	11
Holland		930	340	1,270	6
Denmark		200		200	11
Sweden and Norway		100	460	560	1
Europe		11,235	51,038	62,273	2
United States		3,330	16,850	20,180	1
Canada		535	2,820	3,355	1
Brazil		***	22,210	22,210	1
India		2,240	2,600	4,840	1
China		5,270	3,800	9,070	1/2
Total .		22,610	99,318	121,928	

The average cost of making canals has been £9600 in the United Kingdom, £10,000 in France, £9800 in the United States, and £15,500 in Canada, per mile.

# B.—REMARKABLE CANALS. ·

Date.	Name.	Miles.	Cost.	Per Mile.	Country.
1668	Languedoc .	160	£680,000	£4,250	France.
1776	Bridgewater	38	360,000	9,050	England.
1785	Eyder	26	510,000	19,500	Denmark.
1822	Caledonian .	60	1.140,000	19,000	Scotland.
1825	Helder	60	900,000	15,000	Holland.
1825	Erie	363	1,820,000	5,000	United States.
1830	Cincinnati .	306	610,000	2,000	**
	Rideau	132	800,000	6,060	Canada.
	Welland	41	1,400,000	<b>3</b> 4,150	••
1832	Burgundy .	158	2,220,000	14,050	France.
1854	Bengal	900	2 000,000	2,200	India.
1869	Suez	92	17,030,000	185,000	Egypt.
1874	North Sea	14	2,030,000	145,000	Holland.

#### C.—SUEZ CANAL.

Year.	Ships,	Tons.	Average Tonnage.	Fees,
1870	486	436,000	900	£206,000
1875	1,494	2,940,000	1,960	1,156,000
1880	2,026	4,845,000	2,150	1,630,000
1881	2,540	5,460,000	2,145	2,049,000

Length, 92 miles; depth, 26 feet. The canal was 13 years in construction. Tolls average £860 per vessel, or 11 shillings per ton of net tonnage. Steamers go through in 40 hours, of which 17 steaming. Tugs are provided for sailing vessels at a charge of £200. The saving to commerce by reason of the canal is above 4 millions sterling per annum, that is, 2 millions after payment of the fees. The flags of vessels passing through, since 1870, have been 77 per cent. British, 9 French, 4 Dutch, and 10 per cent. of other nations.

The returns for 1882 show receipts £2,421,000, from which deducting £1,200,000 for working expenses, the net profit is equal to 7 per cent. on the total cost of the work.

The cost of construction was as follows:-

Preliminary exp	ense	в.			£3,800,000
Machinery .	•				2.200,000
Excavation .					7,700,000
Docks and harb	ours				1,400,000
Transport, build	ling»,	&c.		•	1,986,000
Total					£17 038 000

The British Government owns one-fifth of the shares of the canal, having bought 176,602 from the Khedive in 1876, for £3,976,600, being 12½ per cent. premium. The coupons having been cut off, the Khedive pays the interest till 1892. The Canal shortens the voyage between England and the East by one-third; that is, it enables two vessels to do the same work that would require three by the Cape of Good Hope, the distance in nautical miles being as follows:—

London to	By Canal.	By Cape,	Saving Miles.
Bombay	6.330	10.595	4.265
Madras	7.330	10.830°	8,500
Calcutta	7,950	11,450	8,500
Singapore	8.345	11.670	3,325

The proportions of Eastern and Southern trade passing to

and from Great Britain through the Suez Canal appear as follows :---

British Trade with	By Canal.	Ву Саре.	Total.
Australia	£12,000,000	£48,000,000	£65,000,000
China and Japan.	23,000,000	2,000,000	25,000,000
India, &c	69,000,000	15,000,000	84,000,000

Total . . £104,000,000 £60,000,000 £164,000,000

The value of what passes through the Canal is equal to one-seventh of the total foreign commerce of Great Britain.

# D.-PANAMA CANAL

The estimate of works is as follows:-

Nature.			ī	gxeav. Million ibic Yds.	Cost per Cubic Yd.	Sum.	
Clay	•		•		62	15d.	£3,875,000
Rock					11	9s.	4,950,000
Subma	rine				9	15s.	6,750,000
Subsid	iary (	anals	, &c.		•••	•••	8,000,000
Dam a					•••	•••	4,000,000
Piers,	flood	gates,	&c.	•	•••	•••	3,920,000
	Tota	l .					£26,495,000

The clay excavation costs 25 per cent. more than in making the Suez Canal, the average for which was a shilling per cubic yard. The number of workmen averages 3000, and the death-rate is said not to exceed 30 per thousand per annum. It is expected to finish by 1888. The length will be 46 miles, including a tunnel of 4 miles or 7000 yards, which will be 100 feet wide by 160 feet high, which is estimated at something over  $5\frac{1}{2}$  millions sterling, or £800 per yard, being four times as much as per lineal yard of the Mont Cenis tunnel. When completed it will save about 10,000 miles of voyage between Europe and the Pacific, and a fee of 20 shillings per ton on half the amount of traffic that passes through the Suez Canal will amply repay the outlay.

#### E.—Canals Projected.

Locality.	Miles.	Estimated Cost.	Per Mile.
Alexandria and Suez .	150	£	£
Manchester and Liverpool	44	5,200,000	120,000
Malacca	66	4,000,000	60,000
Bordeaux and Narbonne	255	22,000,000	87,000
Corinth	4	1,200,000	300,000
Dniester and Vistula .	460	21,000,000	45,000
Black Sea and Caspian	310	9,000,000	80,000

1800 1513

F.—French Canala							
Miles,	Capital Cost.	Per Mile.					
766	£4,600,000	£6,100					
890	7,700,000	8,600					
1.450	15,100,000	10,400					
2,690	27,800,000	10,300					
9 150	81 400 000	10,000					

The traffic, counting one ton per 60 miles, has risen as follows:--

1849 .	•	•	9.200,000		1869 .	•		17,060,000
1859 .	•	•	12,100,000	ı	1879 .	•	•	18,130,000

#### G.—United States Canals.

	1	Miles.		Cost (MI)-	Tons	Earning
	In Use.	Abandoned.	Total.	lions £).	(Thou- sands).	per Mile
New York	608	857	965	16	7,770	£430
Pennsylvania .	629	477	1,106	11	6,100	515
Ohio	674	205	879	4	840	60
Maryland	194	l	194	2	1,310	370
New Jersey	171	l	171	2	1,860	750
Illinois	102		102	11	750	220
Virginia	43	197	240	2	4,045	490
Other States .	94	728	822	51	2,368	424
Total	2,515	1,964	4,479	44	25,043	£355

The earnings per mile are computed on the canals in use. In the United States water-carriage averages 4 shillings per ton per 100 miles, in France 18 shillings. The canals of the United Kingdom carry 30 million tons per annum, and

earn 2 shillings per ton net over expenses.

The Imperial Canal of China is the longest in the world, and the greatest in point of traffic: its length is 2100 miles, including river sections (or 825 miles the canal proper), and it connects 41 cities situated on its banks. The next in importance is the Vishney, in Russia, 1434 miles (including a part of the Volga), by which St. Petersburg is connected with the Caspian Sca, the value of merchandise carried amounting to 22 millions sterling per annum. Russian canals carry goods worth 105 millions sterling yearly, and employ 300,000 boatmen.

CANOE.—The Rob Roy, which navigated 3000 miles of European rivers, was 13 feet long, 26 inches wide, and 12 inches deep.

# CAPITAL.

# A .- CAPITAL AND INCOME OF GREAT BRITAIN.\*

Valuer.	Date.	Capital, Millions £.	Income, Millions £.	Capital per Inhab.	Income per lubab
Petty	1664	250	42	£45	£8
Davenant .	1701	490	55	l 90	10
Young	1770	1,100	122	153	16
Pitt	1800	1,800	230	170	22
Colquboun	1811	2,180	250	180	21
Liverpool .	1822	2,600	280	186	20
Pebrer	1833	8,750	350	150	14
Porter	1840	4,100	480	152	18
Levi, &c	1860	5,560	760	195	26
Mulhall .	1882	8,720	1,247	248	85

# B.—ELEMENTS OF BRITISH CAPITAL.

		Milli	ons &.	Per I	nhab.	Aliquot Parts.		
		1860.	1882.	1860.	1882.	1860.	1882.	
Houses	_	1,160	2,280	£41	£65	20.8	26.2	
Railways		348	750	12	21	6.3	8.6	
Shipping		42	120	2	4	0.8	1.4	
Bullion		95	143	8	4	1.7	1.6	
Lands		1,840	1,880	65	53	33.0	21.6	
Cattle, &c		460	410	16	12	8.3	4.7	
Merchandise .		210	350	7	10	3.8	4.0	
Foreign Loans .		420	1,100	15	31	7.6	12.6	
Furniture		580	1,140	20	32	10.4	13.1	
Roads, Works, &c.		405	547	14	16	7.3	6.2	
Total		5,560	8,720	£195	£248	100.0	100.0	

For other countries, see Wealth, Income.

# C.—Increase and Distribution of British Capital.

	Millions &.		Capit Inhal	al per bitant.	Aliquot Parti	
	1840.	1877.	1840.	1877.	1840.	1877.
England	3,320	6,552	£210	£262	86.8	82.3
Scotland	196	970	81	277	5.1	12.2
Ireland	308	438	38	83	8.1	5.5
United Kingdom.	3,824	7,960	£147	£239	100.0	100.0

England till 1770, Great Britain 1800 and 1822, United Kingdom from 1833.

The above table is based on the Probate Court returns for 1840 and 1877, but the real ratio for Scotland in 1840 was probably 6 per cent. of the United Kingdom, as mortgages were not then counted in that country.

# D.-British Capital in Stocks and Shares.

	1	MILLIONS &.				
	Amount Quoted on Stock Exchange.	Amount held in Great Britain.	Interest Earned in Great Britain.			
National debt	762	700	21			
Colonial debts	220	200	10			
Foreign "	2,016	400	22			
British railways .	730	700	30			
Foreign and Colonial	825	275	14			
Banks	272	260	15			
Docks, gas, &c	125	120	10			
Total	4,950	2,655	122			

# E.—Capital Called up in 12 Years: All Nations.

				MILLION	s £.	
Year	8.		Loans.	Companies.	Total.	Annual Average.
1871-74			930	1,230	2,160	540
1875-78			520	420	940	235
1879-82		•	430	820	1,250	312
Total			1,880	2,470	4,350	362

Great Britain provided about one-fourth of the total; some estimates say one-third.

# F.—New Capital Requirements, 1879-82.

	_		Amount in   Millions &			Amount in Millions &
Great Brita	in		182	Spain .		25
France			301	Portugal .		11
Germany			38	Switzerland		17
Russia.			107	Belgium .		27
Austria	•		75	Holland .		14
Italy .	•	•	40 l	United States		210

**CAPTURES.**—During the wars with Buonaparte the British navy captured or destroyed the following:—

				2,506
•	•	•	•	1,306
•				662
•	•			382
e line				156
	•	• •	: : :	

In the Franco-German war the Germans took from France 7234 pieces of cannon, including 3485 field-guns: they also took 446,000 prisoners, of whom 384,000 were sent into Germany, including 11,860 officers.

**CARBONATE OF LIME.**—The number of grains per gallon of water in the following rivers is:—

```
Danube, at Vienna . 8:37 | Rhine, at Bale . . 12:79 | Seine, at Paris . . 11:30 | Thames, at Battersea 15:10
```

# CARBONIC ACID.—The quantity exhaled in 24 hours:—

Person. Girl		Oz. Exhaled.	Person. Boy .			Oz. Exhaled. 16
Boy Woman.		10 12	Man			17

The quantity varies according to exertion, viz.:-

	Oz. per Hour.			•	Oz. per Hour.
Sleeping	0.6	Riding .			4.0
Walking 2 miles. per hr.	21	Swimming			4.4
, 3 , ,	3.0 ∣	Treadmill			5.2

**CARRIAGES.**—The number used in Great Britain has increased since 1812 faster than wealth, as appears on comparing the licenses with the number of persons paying income-tax on more than £200 a year:—

Year.	Carriages.	Over £200 Income.	Ratio of Carriages,	Carriages per 1000 Inhabitants.
1812	63,130	39,765	158 to 100	5
1830	85,060	•••		5
1860	245,000	85,530	287 to 100	11
1870	325,000	130,375	250 , 100	12
1880	463,000	210,430	221 ,, 100	15

carried Pigeons.—In 1877 the newspaper Nationale of Paris had 10 pigeons which carried despatches daily between Versailles and Paris in 15 to 20 minutes. In November 1882 some pigeons, in face of a strong wind, made the

distance of 160 miles, from Canton Vaud to Paris, in 61 hours, or 25 miles per hour.

CATS.—The number in the United Kingdom is fully 7 millions, although a remarkable decrease has been noticed in many places, especially seaports, probably owing to the demand for exportation. They came into England before the Conquest, for the tariff of indemnity, in the 10th century, valued them at two pence, being equal to two hens or two gallons of beer. Southey mentions that the first settlers in Brazil paid £300 for a cat, and for kittens, their weight in gold-dust. An offer of £500 for a Persian cat at the Sydenham Cat Show in 1869 was refused.

# CATHOLICS.—See Roman Catholics, Religion. CATTLE.

#### A.—Number in All Countries in 1880.

	1	Тнои	ANDS.	
	Cows.	Horses.	Sheep.	Pigs.
United Kingdom .	9,905	2,905	27,896	3,190
France	11,480	2,833	23,370	5,810
Germany	15,790	3,360	25,200	7,130
Russia	22,770	16,160	48,820	10,514
Austria	13,133	3,760	21,418	7,080
Italy	3,490	658	6,980	1,570
Spain	3,090	590	22,800	4,465
Portugal	530	68	2,417	858
Holland	1,462	279	898	337
Belgium	1,242	283	586	632
Denmark	1,348	352	1,720	504
Sweden	2,237	466	1,503	417
Norway	1,017	152	1,686	101
Greece	258	97	2,292	30
Roumania	3,600	600	6,180	2,310
Europe	91,352	32,563	193,766	44,948
United States	35,926	11,202	35,193	47,634
Canada	2,702	866	3,330	1,425
Australia	7,863	1,065	65,915	815
River Plate	18,390	6,150	76,230	362
Cape Colony	1,330	241	11,280	164
Algeria	1,204	350	8,788	300
The World .	158,767	52,437	394,502	95,648

B.—RATIO OF CATTLE TO 100 INHABITANTS.

		Co	₩8,	8h	eep.	Pigs.	
		1855.	1880.	1855.	1880.	1855.	1880.
United Kingdom		27	28	112	80	10	9
France		34	81	96	65	14	16
Germany		33	34	65	55	12	16
Russia		33	27	66	62	17	13
Austria		50	34	56	56	27	19
Italy		18	12	35	25	10	6
Spain		10	19	100	145	7	28
Portugal	-	19	13	50	55	19	21
Holland		42	87	21	22	17	8
Belgium		27	22	15	11	ii	11
Denmark.	-	60	70	80	90	10	26
Sweden	-	46	50	42	33	15	9
Norway	-	57	53	70	90	25	5
Switzerland	•	42	37	25	14	12	12
Greece	-	20	15	170	135	14	2
Servia	·	60	45	215	160	102	75
Roumania	•	40	37	80	67	19	16
Europe .	•	32	29	70	63	15	15
United States .	•	91	71	108	70	114	94

The numerical increase in Europe was as follows:-

		1855	1880.	Ratio of Increase,
Cows		82,707,000	91,530,000	10 per cent.
Sheep		181,360,000	194,151,000	7 ,
Pigs		39,095,000	45,091,000	15 ,,

Population in Europe rose 22 per cent. in the same interval.

# C.—CATTLE IN UNITED KINGDOM, 1835-81.

Years.	Numi	BER (Thous	NDB).	Annual Slaughter (Thousands).			
	Cows.	Sheep.	Pigs.	Cows.	Sheep.	Pigs.	
1835-40	6,331	22,270	2,260	1,328	8,670	1,552	
1841-45	6,618	26,110	2,313	1,386	10,168	1,565	
1846-50	6,907	28,865	2,434	1,449	11,382	1,622	
1851-55	7,261	30,730	2,685	1,523	12,176	1,788	
1856-60	7.777	32,111	2,940	1,619	12,689	1,973	
1861-65	8,248	33,802	3,027	1,734	13,377	2,015	
1866-70	8,835	35,209	3,104	1,846	13,965	2,071	
1871-75	9,081	34,060	3,080	1,903	13,471	2,047	
1876-81	9,506	31,770	3,120	1,994	12,466	2,080	

# D.—CATTLE REDUCED TO A COMMON DENOMINATION.

The unit is a cow or horse, and sheep or pigs are counted ten for one:—

	Cattle (Million Head).	Value in Millions £.		lue Each Lbit		Head Cattle per 100 Inhabitants
United Kingdom .	15-9	235	£6	14	0	45
France	17-2	212	6	1	0	49
Germany	22.4	230	5	2	0	50
Russia	45.1	845	4	12	0	<b>,</b> 61
Austria	19.7	205	5	11	0	54
Italy	5.1	52	1	18	0	18
Spain	6.4	57	3	10	0	39
Portugal	1.0	11	2	13	0	22
Holland	1-9	33	8	5	0	47
Belgium	1.6	30	5	8	0	29
Denmark	1-9	31	15	18	0	99
Sweden	. 2-9	42	9	15	0	66
Norway	1.4	21	11	0	0	72
Greece	0-6	6	3	9	0	34
Roumania	5.0	48	12	0	0	125
Europe	148-0	1,558	£5	4	0	49
United States	56.4	378	7	10	0	110
Canada	4.0	35	8	0	0	91
Australia	15.7	66	24	0	0	573
River Plate	32.2	62	24	0	0	1,076
Cape Colony	2.7	19	17	0	0	246
Algeria	2.4	24	8	2	0	81
The World .	261.4	2,142	£5	19	0	70

# E.—CATTLE IN UNITED STATES.

		No. per 100 Inhabitanta.				
	1850.	1860.	1870.	1880.	1800.	1890.
Milch cows Other "	6,390 11,394	8,592 17,030	8,943 14,890	12,444 23,482	27 55	25 47
Total cows .	17,784	25,622	23,833	35,926	82	72
Horses Asses, &c	4,331 564	6,253 1,155	7,155 1,132	10,364 1,811	20 4	21 3
Horses and asses	4,895	7,408	8,287	12,175	24	24
Sheep Pigs	21,722 30,353	22,474 33,512	28,481 25,133	35,193 47,685	71 106	70 96
All cattle .	27,887	38,629	37,482	56,389	123	112

<sup>\*</sup> Reduced to common denomination, as in Table D.

#### CAVALRY.

				Number.	Ratio to Army.	Troopers per 10,000 Inhab.	Troopers per 1000 Horses.
Great Britain				18,000	9.5	5	6
France .				69,000	14.0	18	24
Germany .				67,000	15.0	15	20
Russia .				86,000	10.2	11	5
Austria				51,000	18.6	14	14
Italy .				34,000	9.1	12	52
Spain .				13,000	14.5	8	22
Portugal.				3,000	9.0	8	43
Holland .				4,000	6.2	10	15
Belgium .				5,000	10.8	9	18
Denmark .				2,000	5.5	10	6
Sweden and N	orwa	У	•	7,000	11.6	11	12
Europe				359,000	12.0	12	11
United States				8,000	30.0	. 2	1
Total	1	ě.		367,000	12.1	11	8

The last column indicates the number of troopers, on peace footing, compared with the number of horses in each country.

CEMETERIES.	No.	Per 100,000 Inhabitanta	
England		11,304	45
Wales		958	71
France	_	38.041	101

London has 22 cemeteries, with an aggregate of 2210 acres—that is, an acre for 1700 inhabitants. Besides those above stated for England and Wales, there are 1411 cemeteries that have been closed by order of Council. See Burials, Funerals.

CENTENARIANS.—The most remarkable were:—1. Countess of Desmond, killed by falling from a cherry-tree, in her 146th year; 2. Thomas Parr, died after a dinner-party at Lord Arundel's, aged 152; 3. Cardinal de Salis, who recommended daily exercise in all weathers, age 110; 4. John Riva of Venice, who chewed citron bark daily, died aged 116, leaving a son of 14 years.

Lejoncourt, in the 18th century, published a list of 49 persons who had died between the ages of 130 and 175 years.

Besides the foregoing, Mrs. Ann Butler (nèe Winn) died at Portsmouth, January 1883, aged 103 years, daughter of Admiral Winn: also at Ruabon, Wales, in March 1883, Mrs. Betty Lloyd, aged 107, her funeral being attended by two of her children over 80 years.



#### CHARCOAL—CHARITIES.

CHARCOAL.—To make a ton will be required of wood as follows:—

	7	Tone 1				Tons.	ı	1	ODS.
Oak . Chestnut		4.4	Beech Elm	•	:	5·1 5·2	Birch Pine .	-	5-9 6-0

For heating power 12 lbs. charcoal are equal to 10 lbs. coal or 13 lbs. coke. It is much used in America, France, and Italy. The ironworks of the United States consume 600,000 tons charcoal yearly, the yield of 50,000 acres, the average being 12 tons per acre. At Noirmoutiers, in France, 200 furnaces are constantly at work making charcoal from seaweed, 20 tons of fresh weed or 4 tons of dry producing 1 ton of charcoal, value 10 shillings. In Ireland it is often made from peat.

#### CHARITIES.

Ohawisa aabaala

78

#### A .- CHARITABLE REVENUES IN UNITED KINGDOM.

Subscriptions, &c.			£6,600,000	
Bequests			650,000	
English endowments			2,520,000	
Irish endowments			270,000	

#### Total . . . £10,040,000

# B.—CHARITABLE EXPENDITURE IN UNITED KINGDOM.

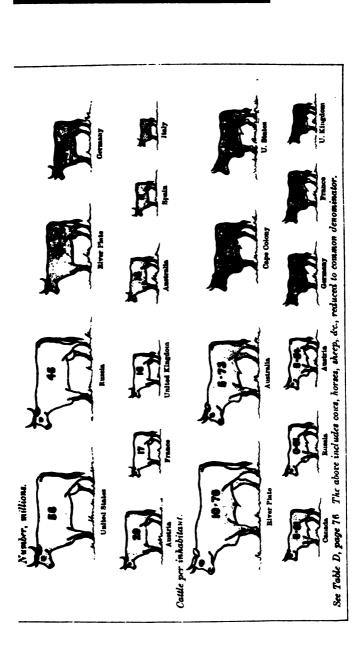
•	•	•	•	£4,200,000
				2,600,000
				2,040,000
•	•	•	•	1,200,000
	:			

Total . . . £10,040,000

#### C.—London Charities, 1881.

		Nur	nber.	Expenditure (Thousands Omitted		
		1859.	1881.	1859.	1881.	
Orphanages		181	270	£409	£458	
Homes for aged		126	284	88	770	
Asylums for blind, &c		9	44	25	156	
Hospitals and dispensaries		92	187	301	596	
Charity schools		60	105	400	450	
Bible Missions	•	14	113	460	1,691	
Total .		482	1,003	£1,683	£4,121	

į





£2,198,000

London charities averaged 12 shillings per inhabitant in 1859, and 22 shillings in 1881. Hospital Sunday collections in churches average £30,000 for city hospitals.

DEngi	ISH	Сн	ARI'	ABLE ENDOW	MENTS, 1876.
Capital . Income .	:	:	1837. £42,600,000 1,940,000	1876. · £51,800,000 2,198,000	
Real estate Stocks .		:		Capital. £31,100,000 20,200,000	Income. £1,558,000 640,000

The real estate comprises 154,000 acres of land and some house property.

Total . . £51,800,000

# E.—FRENCH CHARITIES.

Endowments			•			£2,400,000
Annual bequests					•	1,194,000
State subsidy	•	•	•	•	•	460,000
Donations .	•	•	•	•	•	1,500,000
<b>.</b>	•					
Donations .			-		:	1,500,000

#### F.—ITALIAN CHARITIES.

Endowed capital .			£65,300,000
Income			3,640,000
Cost of management .			1,760,000
Net proceeds for charit	у .		1,880,000

# G.—CHARITABLE BEQUESTS PER ANNUM.

Country.	Country. Amount.		Per £1000 Assets,	of National Earnings.			
United Kingdom.		£650,000	£4	£0		์ 6	
France		1,190,000	6	1	2	0	
Italy		124,000	2	0	9	0	
See Hospitals.							

# CHEESE

#### A .- COMPONENT PARTS.

Water .	_	Chester. 30:4	Parma, 30:3	Brie. 34:0	Dutch. 41:4	Gruyere. 32·1
Nitrogen		8.0	7-9	5.1	7:0	8.0
Fat .		<b>36·6</b>	31.1	53.3	42.8	41.8
Various .		25.0	30.7	· 7·6	8.8	18.1
		100.0	100.0	100-0	100.0	100.0

#### B.—Production and Consumption.

				T	Tons.				
				Production.	Consumption.	Inhabitant			
United Kingde	om			126,000	216,000	13			
France .				15,000	50,000	8			
Germany .				80,000	80,000	4			
Austria?.				45,000	45,000	3			
Italy?		•		14,000	21,000	2			
Switzerland				40,000	22,000	18			
Holland .				40,000	10,000	6			
United States				117,000	50,000	2			
Canada .	•	• •	•	33,000	16,000	9			
Total				510,000	510,000	4			

It takes a gallon of milk to produce 1 lb. of cheese. The Camembert cows in France average yearly £36 per head in cheese. In Canada the average value of cheese is £7 per milch cow—that is, 280 lbs. at 6d.

CHEQUES.—The use of cheques compared with money at various dates and places shows thus:—

D 4 -	<b>m</b>	Per Cent.			
Date.	Place.	Cheques.	Notes and Coi		
1839	London	93-2	6.8		
1859	,,	96.8	3-2		
1881	,	98-9	1.1		
1859	Provinces	47.3	52.7		
1872	1 ,	68.2	31.8		
1881	England and Wales	97.0	3.0		
1881	New York	98.7	1.3		
1881	Western States	81.7	18.3		
1881	United States	91.6	8.4		
1881	United States Banks.	94.4	516		

By referring to Clearing-House, it will be seen that the cheques paid in London and New York in one month aggregate 1270 millions sterling, which is much in excess of all the gold and silver coin in existence. See Bullion, Money, Clearing-House.

#### CHESTNUTS.

Acres					1,220,000	ltaly. 1,226,000
Bushels Do. per 10	00 i	nhabita	nts	:	15,200,000 <b>40</b>	23,100,000 85

The French crop is valued at 3, the Italian at 4, millions sterling; the average yield in France 12, in Italy 18, bushels per acre. Italy exports 500,000 bushels.

**CHILDBIRTH, DEATHS IN.**—The average for 20 years in England and Wales has been 32 per 10,000 births—that is,  $1\frac{1}{3}$  per cent. of all mothers die sooner or later in childbirth. See pages 147, 148.

CHIMNEY.—The highest in the world is that at Port Dundas, Glasgow, 454 feet.

#### CHINCHONA, or JESUIT'S BARK.

#### A.—ANNUAL PRODUCTION.

Peru India Java Jamaica	:	:	:	:	:	:	8,900,000 2,200,000 110,000 21,000
	•	•	Total	•	•	•	11.231.000

#### B.—Indian Plantations.

Planted,	Loc	ality		Trees (Thousands),	Crop, Lbs. Bark.
1860	Nilghiri			540	180,000
1861	Darjeeling			4,680	378,000
1869	Ceylon.			77,000	1,260,000
1875	Burmah		•	2	200
	Total			82,222	1.818.200

Indian bark yields from 4 to 5 per cent. of sulphate of quinine, but the superior quality introduced into Java by Mr. Charles Ledger gives from 6 up to 15 per cent. The plantations in India and Ceylon are valued at 5 millions sterling.

London imports 8 million lbs. yearly, and such is the demand that the price in Bolivia has doubled since 1870, being now 4s. per lb. Some Germans have planted near La Paz 600,000 trees of the Ledger or Caupolican species.

# CHOLERA. See Plague.

#### CHURCH.

#### A.—Church of England, Income and Distribution.

Tithes				£4,054,000
Committee grants				776,000
Other sources	•	•	•	973,000
Total .				£5,803,000

No.	Income.

	Clen	χу.		No.	Income.	Per Head.
Bishops	•	•		33	£168,000	£5,100
Canons				166	240,000	1,440
Rectors				11,780	3,880,000	880
Curates	•	•	•	5,050	565,000	112

CHURCH.

See Tithes.

#### NUMBER OF LIVINGS.

Pro	prieto	r.					No.
Crown .	•						967
Noblemen				•	•		5,357
Bishops	•			•	•	•	2,088
Various	•	•	•	•	•	•	4,476
T	otal						12,888

The Ecclesiastical Report for 1880 shows that in 40 years the Commissioners have expended  $22\frac{1}{4}$  millions in creating new endowments to an annual value of £746,000 in aid of 4700 distressed parishes, say £160 each. The Commissioners distribute about £700,000 a year in creating new benefices, to an average amount of £23,000 per annum. Balance still in hand, £8,200,000. The above tables do not include collegiate endowments, worth £550,000 a year. Total clergy of Church of England 19,000, including 2000 schoolmasters. The Church of England has, moreover, 232 clergymen in Scotland, 820 in Ireland, and 2700 in colonies and foreign countries, making a grand total of 22,752.

### B.—CATHOLIC CHURCH IN BRITISH EMPIRE.

		Bishops.	Priests.	Churches.	Laity.
England .		15	2,112	1,188	1,066,000
Scotland .		6	306	295	318,000
Ireland .		28	3,290	2,760	8,952,000
Canada .		24	1,210	1,050	2,150,000
Australia.		16	876	787	584,000
India .		22	1,179	700	1,318,000
Other colonies		20	315	240	466,000
Total	•	131	8,788	7,020	9,854,000

The average income in the United Kingdom is £400 for a bishop, and £80 for a priest. In India it is £260 per bishop, and £36 per priest. In Canada and Australia it is higher than in England.

82

#### C .- PROTESTANT CHURCH IN IRELAND.

Number of clergy		- 820	Donations .		£118,000
Number of laity	•	635,100	Total income	•	248,000
Endowment .	٠	£130,000	Endowed capital	•	8,260,000

There are 12 bishops, who receive £41,500 per annum, average £3600 each.

In November 1880 the residue of property formerly belonging to the Protestant Church in Ireland was valued at 12 millions, producing a revenue of £574,000, to be devoted to purposes of general utility or beneficence.

## D.—Number of Churches in England and Wales (1883).

Church of England	14,578	Roman Catholic		824
Methodist	11,514	Quaker .		375
Independent .	2,608	Presbyterian		201
Baptist	2,248	Jewish .		60
Calvinist	895	Various .		<b>2,</b> 628
Total		95 (	116	

Total . . . . . . 35,916

In the above are not included 364 Roman Catholic chapels attached to religious houses, possessing no marriage licence.

### E.—Number of Churches in United States.

	Chur	ches.	Minis- ters.		housands tted).	Property, 1870 (Thousands
	1870.	1880.	1880.	1870.	1880.	Omitted).
Baptist	13,962	24,794	15,401	5,450	8,532	£8,400
Methodist	21,337	28,281	16,759	8,160	10,944	14,100
Presbyterian	7,071	10,474	8,026	8,375	3,564	10,600
Roman Catholic .	3,806	5,975	6,366	3,982	6,371	12,200
Lutheran	1,145	5,556	3,102	825	2,740	1,200
Christian Discip.	2,822	4,681	3,658	1,082	2,268	1,200
Congregational .	2,715	2,689	3,589	1,395	1,334	5,100
Episcopal	2,601	3,104	3,564	1,041	1,412	7,200
United Brethren	937	2,573	2,563	330	1,196	400
Unitarians	310	342	394	194	172	1,200
Quakers	662	621	876	280	272	800
Jews	152	269	202	73	70	1,000
Mormons	171	654	3,906	120	440	200
Various	5,391	1,154	8,824	11,808	10,841	7,200
Total	63,082	92,167	77,230	38,115	50,156	£70,800

#### F.—CHURCH IN FRANCE.

Clergy	•	42,548
Sisters of charity, &c		125,400
Church endowed incomes,	•	£190,000
Schools, convents, asylums		£800,000

The capital value of endowments for churches, schools, convents, and asylums amounted in 1880 to £23,300,000. The annual State subsidy is £1,740,000, equal to one shilling per inhabitant, or £40 a year for each priest. The ordinary income of a Curé is £80.

# G .- CHURCH PROPERTY IN ITALY.

The Italian Government confiscated properties worth 55 millions sterling, of which nearly half has been sold, viz :—

Sold (1868–80) Held by State	:	:	Capital. £21,200,000 83,900,000	£1,450,000 1,240,000
Total			£55,100,000	£2,690,000

Out of the above income the Italian Government pays £428,000 per annum to 32,590 monks and nuns, say £13 each. The Pope has always refused the allowance of £120,000 a year offered him, and is maintained by Peter's pence from all nations. The number of parochial clergy in Italy is 20,067, of whom 2236 have less than £30 a year income.

#### H.—CHURCH IN AUSTRIA.

Bishops		98	1	Friare	•	9,600
Priests .	•	55,200	ı	Nuns		5,200

The Church forests and other properties are valued at 19 millions sterling. Total church revenue, £1,890,100, the highest income being £30,000 per annum to the Archbishop of Olmutz. Priests average £30 a year.

#### I.—CHURCH OF RUSSIA.

Bishops .	40	Convents		550
Parish priests	49,200	Churches	•	85,400

The State subsidy is £800,000 per annum, besides which the Church lands give a revenue of £17 to each priest.

# CHURCHES.

# K.—Churches in Australia.

	Chi	arches,	Ministers.	Laity.	Churches, per 100,000 Inhabitants.
Church of England	1	.398	659	982,000	142
Roman Catholic .		791	<b>378</b>	581,000	136
Methodists	1	.608	859	399,000	402
Presbyterians .	1	.046	870	864,000	285
Various		,170	889	585,000	218
Total	6	,013	2,155	2,861,000	210
			Churches.	Ministers,	Sunday Schools,
New South Wales			1,330	706	1,285
Victoria			2,843	759	1,557
South Australia			725	165	570
New Zealand .			553	277	360
Queensland .			172	76	100
Tasmania			819	139	112
West Australia .	•	•	71	88	40
Total		•	6,013	2,155	4,024

## CHURCHES.

# A.—CHURCHES AND CLERGY.

			Churches.	Clergy.	Churches, per 100,000 Inhabitants.
England .			35,916	41,320	144
Ireland .			4,540	4,110	88
France .			39,314	42,543	105
Germany .		•	37,720	31,910	84
Austria .			36,180	61,240	98
Russia .			42,670	49,330	55
Italy			22,260	40,150	81
Spain .			18,600	42,765	112
United Stat	es .		92,167	77,230	181
Australia .			6,013	2,155	210

# B.—LARGEST CHURCHES.

			~	 	
Name.		City.		Square Yards.	Capacity, No. of Persons.
St. Peter's		Rome		13,600	54,000
Duomo .		Milan		9,200	37,000
St. Paul's		Rome		8,000	32,000
St. Paul's		London		6,500	26,000
Cathedral		Antwerp		6,000	24,000
St. Sophia		Constantin	nople	5,700	23,000
Notre Dame		Paris.		4.200	21.000

CIDER. See Apples.



# CITIES.

# CITIES.

	Population	PER	PER 1000 INHABITARTS.				
	(Thousands).	Births,	Births, Deaths.		Annuel Tempera- ture.		
Alexandria	232	45-0	84-2	10.8			
Algiers	62	•••	80.1		64.3		
Amsterdam	826	<b>86·7</b>	23.7	13-0	49-9		
Antwerp	182	•••	24.7				
Baltimore	832	•••	21.1		54-9		
Barcelona	260	29-2	•••		63.0		
Belfast	185	•••	28.2		52·1		
Berlin	1,129	87.5	27.6	9-9	48-2		
Birmingham	402	87 <del>·</del> 6	19.8	17.8	48-2		
Bombay	644	25.6	33.7		81.8		
Bordeaux	212	•••	26.7		57-0		
Boston	363	80.0	23.5	6.5	48.4		
Boulogne	123	•••			54.4		
Bradford	184	<b>3</b> 3·1	21.1	12.0			
Breslau	273	37·7	32.5	5-2	46.7		
Brighton	108	<b>30·6</b>	19.0	11.6	•••		
Bristol	207	34.5	19.6	14-9	51-7		
Brussels	407	34 7	23.9	10.8	50.7		
Bucharest	222	29.5	24.5	50	46.4		
Buda-Pesth	870	35·8	35.2	0.6	47.5		
Buenos Ayres .	212	31.7	30.1	1.6	62.8		
Cairo . ,	815	•••			72 <del>-2</del>		
Calcutta	429	•••	31.1	l	82.4		
Chicago	503	•••	20-2		45.9		
Christiania	120	34.5	18.8	15.7	41.5		
Cincinnati	256	•••	20-2		54.7		
Constantinople .	819	•••			56·5		
Copenhagen	235	39.1	22.1	17-0	46 6		
Dresden	221	35.4	25.4	10-0	49.1		
Dublin	350	29.1	27.1	2.0	50.1		
Edinburgh	229	$32 \cdot 2$	20.2	12-0	47.1		
Florence	168	•••		l	59.2		
Frankfort	138		!		49.6		
Geneva	69	24.3	21-2	8.1	52·7		
Genoa	179	•••	l	l	61.1		
Glasgow	512	37· <b>4</b>	25.3	12.1	49.8		
Hague	118	39.7	23.3	16.4	•••		
Hamburg	454	37.5	24.5	13.0	480		
Havanna,	230	25.4	45.7		79.1		
Hull	155	36· <b>4</b>	23.8	126			
Jerusalem	28	•••			62.6		
Leeds	810	36.8	21.6	15.2			
Leicester	123	38 4	21.8	16.6			
Leipsic	149	•••	26.1		46.4		
• • • •				1	1		

# CITIES.

	Population	Pic	PER 1000 INHABITANTS.				
	(Thousands).	Births,	Deaths.	Increase, -	Temper ture.		
Lima	130				73.3		
Lisbon	224	***	***		61.4		
Liverpool	555	37.6	26.7	10.9	50.8		
London	3,832	34.7	21.2	13.5	508		
Lyons	377	26 0	24.7	1.3			
Madras	398	39.0	38.8	0.2	81.9		
Madrid	396	37.5	37.4	0.1	58.2		
Manchester	549	36.9	25.5	11.4	48.8		
Manilla	270		200		78.4		
Marseilles	360		28.0		58.3		
Melbourne	281	***	27.2	4	57.0		
Mexico	212	***	30-9	***	60-9		
Milan	321	***	30.6	***	55.1		
Montenal	117	***			44.6		
	694	***	37.0	12.2			
Moscow		00.7	00.0	0.7	40.0		
Munich	230	39.5	32.8	, 6.7	48.4		
Naples	491	32.0	33.1	222	60.3		
Newcastle	145	36.8	21.8	15.0	***		
New Orleans .	216	***	22.7	***	69.1		
New York	1,243	34.6	26.2	8.4	51.8		
Nottingham	187	36.7	22.4	14.3			
Oldham	115	35.4	22.8	12.6	***		
Palermo	245		28.5	40.	63.1		
Paris	2,269	30.5	28.6	1.9	51.3		
Philadelphia .	868	30.0	20.5	9.5	52.1		
Portsmouth	128	34.4	19.7	14.7	***		
Quebec	60	***	22.9	***	40.3		
Quito	84	***			60.9		
Rio Janeiro	275	35.5	39.4	***	77.2		
Rome	301	27-2	26.8	0.4	60.5		
Rotterdam	153	38.8	23.3	15.5	51-0		
Rouen	106		31.3		***		
St. Louis	351	30.0	19.3	10.7	55.0		
St. Petersburg .	703	37.8	51.4		39.6		
San Francisco .	234		18.1	***	55.2		
Sheffield	284	38.0	21.6	16.4	Gree.		
Stockholm	163	33.0	24.7	8.3	42.3		
Sunderland	117	39.3	20.9	18.4			
Sydney	222				65.8		
Tunis	210				68.8		
Turin	241	31.5	25.6	5.9	53:1		
Valparaiso	101		64.6		64.0		
Venice	- 1	30.2	22.7	7.5	55.4		
Vienna	731	39-2	29.0		51.0		
Warsaw	318	00 2	250		44.2		
Washington	2.2		22.9		56.2		
mentagrou .	141	***	200		00 2		

CIVIL SERVICE.—In the United Kingdom 29,000 persons, with an aggregate salary of £4,000,000, say £130 each.

### CLEARING-HOUSE.

#### A.—Annual Business in 1881.

Place.	Millions &	Per Inhab.	Per Day.
London	6,383	£1,680	£20,500,000
Paris	2,200	1,002	7,000,000
Berlin	989	930	8,200,000
Vienna	463	620	1,500,000
Manchester .	112	205	350,000
New York .	7,723	6,100	25,000,000
United States	12,873	250	42,000,000

### B.—Increase of London Business.

Year. 1839		Millions &. 980	Per Inhab. £490	Per Day. £3,200,000		
1867-70.		8,540	1,200	12,000,000		
1871-80.		5,210	1,500	17,000,000		
1881 .		6,383	1,680	20,500,000		

### C .- INCREASE OF NEW YORK BUSINESS.

Year.	Tear, Millions &,		Per Inhab.	Per Day.		
1853			261	£510	£800,000	
1863			3,486	4,200	11,000,000	
1873			5,665	5,700	18,000,000	
1881		•	7,723	6,100	25,000,000	

### D.—Increase of Continental Clearing-Houses.

	Milli	ons &	Daily Average.			
Paris .	1873.	1881.	1878.	1881.		
	881	2,200	£2,800,000	£7,000,000		
Berlin .	1,070	989	3,400,000	3,200,000		
Vienna	177	463	550,000	1,500,000		
Total .	2,128	3,652	£6,750,000	£11,700,000		

### See Cheques.

# CLOCKS.—The most remarkable have been :-

A.D.
760. One presented by Pope Paul I. to Pepin.
810. That sent to Charlemagne by Haroun-al-Raschid.
1292. That put up in Canterbury Cathedral.
1370. The famous clock of Strasburg.

1580. Musical clocks made in Germany. 1639. Galileo's, for astronomical uses. 1762. Harrison's chronometer, London.

# COAL.

# A.—Production in all Countries.

					_ 1	Millions of Tor	<b>15.</b>
				•	1842.	1860.	1880.
Great Brita	in				35	85	147
France .					4	8	19
Germany .					11	14	59
Russia					•••	1	7
Austria					1	8	16
Belgium .			•		3	10	17
Europe .					54	121	265
United Sta	tes	:	•	:	3	15	70
China .					3	3	3
Australia,	kc.				1	2	6
					_		
The Wor	ld				61	141	344

# B.—Consumption in all Countries.

						Million	Cwts.
a						Tons,	per Inhabitant.
Great Brit			•	•	•	130	74
United Sta	ates					70	28
Germany						55	24
France						27	14
Austria						16	9
Belgium						12	44
Russia						9	2
Holland						3	14
Spain and	Port	ugal				2	2
Italy.						3	· 2
Various		•				17	•••
			Tot	tal	•	344	18

# C.—Industry of Coal-Mining.

	Value of Output, 1880.	Number of Miners.	Tons Raised per Miner.	1871–80, Value at Pit's Mouth.
Great Britain.	£47,000,000	485,000	303	£0 7 0
United States	28,000,000	240,000	295	0 9 0
Germany	13,700,000	220,000	270	0 5 0
France	11,200,000	102,000	190	0 11 0
Belgium	6,100,000	101,000	168	0 7 8
Austria	4,200,000	83,000	192	0 6 0
Total, .	£110,200,000	1,231,000	269	£0 7 8

1

### D.-COAL-FIELDS OF THE WORLD.

~							Square miles,
Great Bri	itain	•	•		•	•	9,000
France							1,800
Germany	•			•			3,600
Russia							27,000
Belgium,	Spain	n, &	c.,	•	•	•	1,400
Europe							42,800
United S	tates						194,000
India							35,000
China			•				200,000
				Total			471,800

### E.—Coal Production in Great Britain.

Year.	Tons (thousands),	Cwts, per Inhab.	Year.	Tons (thousands).	Cwts. per Inhab.
1660	<b>2,150</b>	8	1846	36,400	27
1700	2,610	9	1853	54,000	38
1750	4,774	11	1860	84,000	58
1800	10,080	21	1870	110,000	72
1829	16,035	14	1880	147,000	82

### F.—PRODUCTION AND EXTENT OF FIELDS.

		Million Tons, 1880.	Content of Field, Mill on Tons.	Years of Supply,
South Wales .		. 15	32,000	2,150
Midland		. 15	18,000	1,200
Northumberland		. 16	10,000	620
Stafford		. 15	6,000	400
Lancashire .		. 22	5,000	230
Yorkshire, &c.		. 46	9.000	196
Scotland .	•	. 18	10,000	550
Total		. 147	90,000	612

The Parliamentary report shows 90 milliards of tons, that is, enough for 600 years at our present rate of production, without going deeper than 4000 feet. The deepest coalmine now working in Great Britain is the Rosebridge, 2500 feet. The Lambert colliery, in Belgium, is 3490 feet deep.

## G .-- PRICE OF COAL IN LONDON SINCE 1730.

Years.	Per Ton.	Years.	Per Ton.	Yours.	Per Ton.
1730-50	£1 7 2	1820-30	£1 12 0		£0 18 6
1751-99	1 14 9	1831-40	1 4 0	1861-70	0 18 5
1800-20	2 13 3	1841-50	0 19 0	1871-80	0 18 4

### H.—Consumption of British Coal.

								Milli	on Tons.
Factories		•							50
Domestic	<b>use</b>								35
Railways	and	Stea	mers						17
Gas and	Wat	erwor	ks			-			16
Mines						•			10
Export		-				-	-		19
	•	•	•	•	•	•	•	•	
			T	otal					147

# I.—BRITISH COAL CONSUMED ABROAD.

	_		_				
In-	_					Tons.	Lbs. per Inhab.
France		•				3,800,000	220
Germany						2,200,000	108
Russia						1,500,000	40
Italy						1,550,000	118
Spain	•	-	:			1,000,000	140
Sweden a	nd	Norway		•	:	1,400,000	470
Other par		•			•	7,650,000	•••
			1	otal	-	19,100,000	

# K.—French Consumption of Coal

# ANNUAL AVERAGE.

Years.	Tons (thousands).	Lbs. per Inhabitant.
1830-40	. 3,600	245
1860-65	. 17,500	<b>1,</b> 110
1875-82	. 24,700	1,470

France consumes 19 million tons of native, and 8 million tons of imported coal. The French collieries in 1879 gave this result:—

		Va	lue		£8,840,000	£0	10	4
Net profit .	•	•	•	•	1,480,000	0	1	9
Other expens	es		•		3,320,000	0	3	11
Wages .			•		£4,040,000	£0	4	8
XX7					C4 040 000		7 4	'11.

# L.—HARZE'S TABLE OF PRODUCTION.

### Tons (Thousands Omitted).

				(	,-	
Year.			•	Belgium.	France.	Germany.
1831				2,305	1,509	1,700
1841				4,028	3,410	3,341
1851				6,234	1,485	6,041
1861		•		10,057	9,423	15,080
1871				13,733	13,259	32,843
1880				16,867	19,362	52,048

This seems to omit the "brown coal" of Germany. See A.

### COAST TRAFFIC-COBDEN TREATY.

## M.—GRAVITY AND CARBON.

	Weight, lbs. per cubic yd.	Per- centage Carbon.		Weight, lbs. per cubic yd.	Per- centage Carbou.
Rhode Island .	3,054	86	Newcastle .	. 2,160	87
Massachusetts .	2,882	97	Peat	. 2,160	57
Pennsylvania .	2,715	89	Marseilles .	. 2,080	63
Mayenne (Fr.).		91	Greek	. 2,020	60
Swansea		89	Westphalia .	. 1,840	63
Lancashire	2,240	88	Wood	. 1,100	50

See Coke.

92

COAST TRAFFIC.—In the United Kingdom in 1880 the port entries for coast traffic amounted to 36 million tons, being an average of 32 voyages per annum for 12,580 vessels, with aggregate of 1,130,000 tons, engaged in this trade—average per vessel 90 tons.

In France the coast traffic is done by:-

		Mediterranean.	Other Ports.	Total.
Vessels .		. 50,700	10,130	60,830
Tons .		2,260,000	1,255,000	3,515,000
Average to	ns .	. 45	124	59

There is no return of the tonnage entries.

In Italy the coast traffic is double the amount of the entries from the high seas, and is rapidly increasing:—

			Tons.
1870			5,930,000
1879	_		8 848 000

This shows an increase of 40 per cent.

The United States show the following tonnage of American vessels engaged in coasting trade:—

					Tons.
1860	•				2,645,000
1870					2,638,000
1881	•	•	•	•	2,646,000

COBDEN TREATY, in 1860, reduced duty on French wines by one-half, the French reducing duties on coal and iron, and stipulating that no import duties in France were to exceed 25 per cent. ad valorem.

COCHINEAL.—Canary Islands exported in 1880 three million lbs., valued at £350,000. Great Britain imports three million lbs., against five million lbs. ten years ago.

### **COCOA**

Consumption in United Kingdon
-------------------------------

			^		
Year.		Lbs.	Duty, per lb.	Price, per lb.	Consumption, os. per luhab.
1831 .		440,000	6d.	9d.	1
1841 .		1,220,000	2d.	7d.	<u> </u>
1851 .		5,810,000	2d.	5d.	8
1861 .		4,520,000	1d.	6d.	21
1871 .		7,252,000	1d.	5 d.	4
1881 .	•	10,885,000	1d.	8ď.	5

## COD.—The average take is as follows:—

		Mi	llion Fish	. Tons.	Value.
Great Bri	tain .		8	18,000	£200,000
France .			21	84,000	340,000
Norway .			65	110,000	1,050,000
Canada .	•	•	28	45,000	520,000
	Total		122	202,000	£2,110,000

The production of cod-liver oil averages 900,000 gallons yearly, chiefly in Norway and Canada, 100 livers yielding one gallon of oil. See *Fisheries*.

### COPPEE.

## A.—Production.

				Tone (T	ousands).	Value of Crop (1880),
				1855.	1880.	Millions £.
Brazil .				163	833	22
Java .				70	90	7
Ceylon .				29	53	4
West Indies				28	42	3
Africa .				22	86	3
Manilla, &c.	•	•	•	9	85	8
		Total		321	589	42

### B.—Increase of Production.

Year.		Thousand Tons.	Year.		Thousand Tons.
1832		, 95	1865		. 422
1844		. 255	1875		. 505
1855		. 321	1881		. 589

#### COIN.

## C.—Consumption of Coffee.

					Thousand Tons.	Lbs. per Inhabitant.
United Kinge	lom				15	0.8
France .					55	8-2
Germany					110	5.2
Russia .	•				20	0.4
Austria .			•		40	2-2
Italy .			•		14	1.1
Belgium and	Holls	nd	•		50	11.2
Scandinavia					20	5-2
Europe					<b>324</b>	2-2
United State	8				165	7-2
Brazil .				•	62	14-0
Colonies, &c.			•		88	20
•			Total	•	589	•••

The coffee fields of Brazil cover 2 million acres, with 800 million trees—that is, 400 per acre, each tree averaging almost 1 lb. per annum, the industry employing 800,000 hands.

### D.—Consumption in United Kingdom.

Year.			Millions lbs.	Os. per Inhab.	Duty, per lb.	Price,
1801			1	1	6d.	•
1811			6	5	7d.	95s.
1821			7	5	12d.	102s.
1831			22	14	6d.	65s.
1841			27	16	6d.	98s.
1851			30	18	6d.	82s.
1861			35	21	3d.	69s.
1871	•		30	15	3d.	63s.
1881	•	•	31	14	2d.	78s.

### COIN.

# A.—Age of British Gold Coin (1882).

Date minted. Before 1840				ereigns. er cent.		overeigns. er cent.
1840-1850			10 -	**	9 -	**
1851-1860			17	"	19	"
1861-1870			31	"	25	"
1871-1881	•	•	84	,,	46	 Ji
		•	100		100	
			100		100	

On an average every £100 of gold coin in use in 1882 wanted half-a-sovereign to make weight, according to the bankers' census.



## COIN.

# B.—GOLD COINS OF ALL NATIONS.

Country.	Name.	Weight, os.	Fineness.	Value.		
Austria	Ducat	0.112	986	£0 9 6		
••	Crown	0.357	900	178		
Bolivia	Doubloon	0.867	870	8 5 0		
Brazil	20-milrei	0.575	917	2 5 6		
Chili	Condor	0.492	900	1 18 2		
Denmark		0.427	895	1 18 0		
	20-france	0-207	899	0 16 0		
Germany	l	0.427	908	1 13 4		
Great Britain .	Sovereign	0-257	916	1 0 0		
Greece	20-drachms	0.185	900	0 14 4		
Holland		0.215	899	0 16 8		
India		0.874	916	1 9 6		
Japan	Cobang	0.362	568	0 18 6		
Persia	Toman	0002	***	0 16 0		
Russia		0.210	916	0 16 8		
	Alfonso	0.268	896			
Spain Sweden		0.111	975			
	Ducat					
Turkey	100-piastres .	0.231	915	0 18 2		

# C.—SILVER COINS OF ALL NATIONS.

Country.	Country. Name.		Fineness.	s. Value.		
Austria	Florin	0.397	900	£0 2 0		
••	Dollar	0.596	900	0 3 0		
Bolivia	Half-dollar.	0.432	667	0 1 8		
Brazil	Milrei	0.410	918	0 2 2		
Chili	Dollar	0.801	900	0 4 1		
China	Tael			0 6 0		
	2-rigsdaler	0.927	877	0 4 7		
	5-france	0.800	900	0 4 0		
• • • • • •	Thaler	0.595	900	0 8 0		
Great Britain .		0.182	925	0 1 0		
Greece	5-drachms	0.719	900	0 8 8		
	21-guilder		944	0 4 2		
India		0 374				
	Rupee		916			
Japan		0.279	890	0 1 5		
Persia	Kran			0 0 10		
	Rouble	0.667	875	0 8 4		
Spain	Peseta	0.166	899	0 0 10		
Sweden	Rixdaler	1.092	750	0 4 8		
Turkey	20-piastres	0.770	830	0 3 7		

Gold coin loses 1 per cent. of its weight in 50 years; silver coin 1 per cent. in 10 years.

COIN.

# D.-ACTUAL AMOUNT OF COIN.

		MILLIONS &		
	Gold.	Silver.	Total.	Per Inhabitant
United Kingdom	124	19	143	£4 1 0
France	191	110	301	8 0 6
Germany	70	45	115	2 12 0
Russia	22	12	84	0 7 0
Austria	10	10	20	0 11 0
Italy	15	10	25	0 17 0
Spain and Portugal .	40	17	57	2 16 0
Holland and Belgium .	16	25	41	4 9 0
Scandinavia	6		l - <u>-</u> 8	0 18 6
Switzerland	i ă	Ā	1 7	2 12 0
Turkey and Greece .	3	2 8 2	5	0 10 0
Europe	501	255	756	2 8 0
United States	110	86	146	2 17 0
Spanish America	15	11	26	1 1 0
India	16	140	156	0 15 0
Japan	10	10	20	0 12 0
Australia	15	i	16	5 10 0
South Africa	5	l ī	6	5 15 0
Canada	i	ī	2	0 9 0
The World	673	455	1,128	1 16 4

# E.—Coin Minted from 1850 to December 1881.

					Per Head of			
			ļ	Gold.	Silver.	Total.	Populat	
United King	don	a .		153	13	166	£5 7	0
France .			.	299	45	344	9 11	0
Germany				89	56	145	3 13	0
Russia .				115	20	135	: 1 15	Ō
Austria				14	38	52	1 10	Ŏ
Italy .				10	20	30	1 4	Ō
Spain .	Ŀ	•		17	· 10	27	1 16	Ŏ
Portugal				13	i	14	3 15	Ŏ
Belgium	•	·		23	18	41	8 2	Ŏ
Holland		·		-6	30	36	10 3	Ö
Scandinavia	:	:		5	2	7	1 1	Ŏ
Europe				744	253	997	3 10	6
United State	28		.	213	46	259	3 9	0
Australia				63		63	35 2	0
India .		•		2	196	198	1 2	0
The Worl	ď			1.022	495	1.517	3 1	0

# F.—Coin Minted in Great Britain since 1200.

		•		THOUSANDS.		Annual	
Period.	Period.		Gold.	Silver.	Total.	Average.	
1290-1420		•	£35	£183	£218	£990	
1421-1509			19	164	183	2,100	
1510-1608			1,475	5,485	6,960	74,800	
1604-1688			18,432	17.421	30,853	867,000	
1689-1760			26,058	8,239	34,297	444,000	
1761-1820			75.447	6,828	82,275	1,370,000	
1821-1837			47,815	3,338	50,653	8,170,000	
1838-1880			246,908	17,259	264,167	6,140,000	

The last period ends with December 1880, and includes £57,352,000 gold minted in Australia.

# G.—United States Mint.

Period.		- 1		Appual		
		1	Gold.	Silver. Total.		Average.
1793-1820		-	1.3	2.2	3.5	0.1
1821-1840		.	1.9	8.9	10.8	0.5
1841-1850		. 1	19.8	4.5	24.3	2.4
1851-1860		.	66 0	9.3	75.3	7.5
1861-1881		.	147.2	37.1	184.3	8.8

## H.-QUANTITY OF COIN IN THE WORLD SINCE 1600.

	MILLIONS &.										
Date (A.D	.).		Coin.	Commerce.	Ratio of Coin to Commerce.						
1600	•		130	35	371						
1700			297	94	316 .						
1809			380	286	133						
1830			313	368	85						
1880			1128	2650	42						

### I.—QUANTITY OF COIN IN GREAT BRITAIN SINCE 1560.

		THOUSANDS.	1	Ratio to	
Year.	Gold.	Silver.	Total.	Per Inhabitant.	Com- merce.
1560	£300	£800	£1,100	£0 4 6	41
1688	8,500	3,000	11,500	2 2 0	140
1711	12,000	4,000	16,000	2 15 0	107
1798	37,000	8,000	45,000	4 10 0	70
1844	51,000	10,000	61,000	2 5 6	45
1858	90,000	14,800	104,800	3 13 0	40
1872	107,600	17,000	124,600	3 19 0	23
1881	123,600	19,300	142,900	4 0 2	2 7



# COINS—COKE.

## K.—Coin in France since 1784.

	Millions & Sterling.			1			
Year.	Gold.	Silver.	Total.	Per Inhabitant.			
1784	2	86	88	£3 12 0			
1805	8	99	102	8 14 0			
1840	4	111	115	870			
1880	190	110	800	8 0 2			

# L.—Coin in United States since 1820.

Year.		Amount.	Per Inhabitant	
1820			£7,400,000	£1 5 0
1849			29,300,000	1 4 0
1854			50,900,000	1 16 0
1880			146,000,000	2 17 0

# See Gold, Silver, Mint, Money.

# M.—OLD ENGLISH GOLD COINS.

Name. Date.			Nominal	Value.	In Present Money		
Noble .			1345	£0 6	8 8	£1 1 10	
Angel .			1465	0 6	8 8	0 11 9	
Crown .			1530	0 5	0	076	
Sovereign			1551	1 10	0 (	180	
Noble .			1600	0 18	5 0	0 16 0	
Sovereign	·		1626	1 0	Ò	1 1 4	

# N .- OLD FRENCH COINS.

Date.	Name.	Actual Value.	Date.	Name.	Actual Value,
1226	Angel	£0 11 8	1507	Porcupine .	£0 9 0
1258	Tournois .	0 0 9	1539	Salamander	0 9 0
1289	Esterlin	0 0 3	1550	Henri	0 9 E
1294	Royal	0 19 0	1575	Franc	0 2 3
1346	Couronne .	0 15 <b>0</b>	1640	Louis	0 16 8
1428	Mouton	0 5 6	1652	,, silver	0 4 5
1430	Royal	0 10 4	1655	Lily, gold .	0 10 r
1435	Ecu	084	1656	,, ailver.	0 1 5

# O.—EUROPEAN COINS OF 18TH CENTURY.

			Pence,			Pence.
French livre .			10	Spanish ducat		40
Geneva			17	Genoese "		49
Hamburg mark	•	•	19	Venetian "	•	51
Austrian florin			21	Roman scudo		55

### CC

OKE.						
			Yield from a Ton of Coal.			Yield from a Tota of Coal.
Westphalia			36 per cent.	Pennsylvania		
Marseilles				Mayenne		
Lancashir <del>e</del>	•	•	58 ,,	Wales	٠	91 "

**COLD.**—The greatest degrees of cold recorded in England were 16 below zero at London on Christmas Day, 1796, and 8 below zero at Nottingham on Christmas Day, 1860. See *Meteorology* and *Frost*.

COLONIES, BRITISH.—Their growth in 20 years has been as follows:—

## A.—Population and Commerce.

		lation sands).		merce ands £).	Ratio of Increase.		
	1860.	1860. 1880.		1880.	Pop.	Commerce.	
7 95 90 0	the second	-96			Per cent.	Per cent.	
Australia .	1,358	2,866	49,950	88,610	112	78	
Canada	3,294	4,270	22,712	35,108	30	54	
South Africa	389	1,368	5,041	21,112	251	320	
West Africa	210	524	882	3,130	148	245	
Mauritius .	310	357	5,029	5,640	16	12	
Ceylon	1,919	2,558	6,102	9,980	33	63	
Straits Setts.	282	308	14,480		10	105	
West Indies	1,075	1,365	11,169	16,460	27	48	
Various	192	438	5,628	41,870	132	616	
Cyprus		220		410		944	
Colonies .	9,029	14,274	120,993	252,005	58	109	
India	143,271	214,600	69,510	109,820	49	57	
Total	152,300	228,874	190,503	361,825	50	90	

# B.—REVENUE AND DEBT.

		enue ands £).		bts ands £).	Ratio of Increase.		
	1860.	1860. 1880.		1880.	Rovenue.	Debt.	
					Per cent.	Per cent.	
Australia	5,760	19,315	10,679	94,312	233	781	
Canada	2.065	5.310	14,232	36,800	158	157	
South Africa .	822	3,770	418	13,870	310	3,350	
West Africa .	55	251		104	360	•••	
Mauritius	553	764		800	36	•••	
Ceylon	767	1,383	100	671	80	571	
West Indies .	920	1,880	1,496	1,450	105		
Cyprus		165				•••	
Various	333	923	110	540	180	390	
Colonies	11,275	33,761	27,035	148,567	200	448	
India	39,706	67,615		153,610	70	56	
Total .	50,981	101,376	125,142	302,177	99	142	

## COLOUR-BLIND-COMMERCE.

## C.—RATIOS PER INHABITANT IN 1880.

		Commerce.	Revent	10.	Debt.	Railway Capital
Australia	•	£30	£6 16	0	£32	£20
Canada .	•	8	1 5	0	8	18
South Africa	•	16	2 15	0	10	6
West Africa		6	0 10	0		l
Mauritius		16	1 9	0	2	2
Cevlon .		4	0 11	Ò		l ī
Ceylon . West Indies		12	1 7	0	1	1 1
Cyprus .		2	0 15	Ò		
India .		i	0 6	2	•	"

COLOUR-BLIND.—In the schools of the United States 4 per cent. of male children were found colour-blind, and less than 1 per cent. of female. It is stated that similar results have been shown in Europe.

### COMETS.

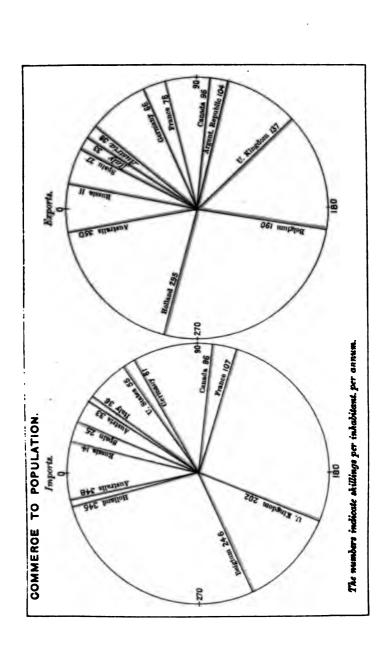
100

Name.		Years of		MILES FROM	Next	
Nam	16.		Revolution.	Greatest Distance.	Least Distance.	Return.
Halley .			77	8,200	56	1910
Mechain .			14	l ' <b>.</b>		1885
Faye .			8	603	192	1888
D'Arrest .			7		l	1883
Biela .			7	585	82	1886
Brorsen .			6	537	64	1884
Winnecke			6	l	l	1885
De Vico .			6	475	110	1883
Encke .			3	387	32	1884

## COMMERCE.

## A .- RATIO OF COMMERCE PER INHABITANT.

	1	830.		:	1850.		1	870.		1	880.	
United Kingdom .	£3	12	0	£6	1	0	£14	16	0	£16	6	0
France	1	2	0	2	3	0	6	4	0	9	0	6
Germany	1	4	0	8	3	0	5	6	0	7	1	0
Russia	0	8	6	0	11	0	1	7	0	1	10	0
Austria	0	13	0	0	19	0	2	7	0	8	7	6
Italy	0	13	6	1	6	0	. 3	1	0	3	6	6
Spain and Portugal	0	14	8	1	3	0	2	2	0	2	13	0
Holland	5	14	0	14	16	0	19	8	0	30	2	0
Belgium	3	18	0	8	3	0	12	12	0	21	1	0
Scandinavia	1	12	0	2	17	0	5	15	0	6	10	6
Europe	1	4	8	2	2	6	4	18	2	6	9	6
United States	2	Ō	0	2	13	4	4	9	8	6	1	0





# B.—Aggregate of Net Imports and Exports.

			Milli	ONS &.		
	1830.	1840.	1850.	1860.	1870.	1880.
United Kingdom .	88	113	169	318	459	571
France	37	66	75	167	227	339
Germany	83	56	105	160	212	815
Russia	20	25	82	46	100	121
Austria	16	22	29	51	83	128
Italy	111	17	26	46	74	96
Spain and Portugal.	11	14	20	80	41	54
Holland	16	27	44	56	71	121
Belgium	14	20	35	48	64	116
Scandinavia	8	12	17	80	42	55
Europe	254	372	552	952	1,373	1,916
United States	25	43	64	137	172	809
South America	14	22	38	62	85	101
British Colonies .	29	62	93	190	241	362
The World	322	499	747	1,841	1,871	2,688

# C.—ALIQUOT PARTS OF COMMERCE SINCE 1830.

	1830.	1840.	1850.	1860.	1870.	1880.
United Kingdom .	27.3	22.7	22.5	23.8	24.5	21.2
France	11.5	13.3	10.1	12.5	12.2	12.6
Germany	10.3	11.2	14.0	11.9	11.5	11.7
Russia	6.2	5.0	4.4	3.4	5.3	4.5
Austria .	5.0	4.4	3.9	3.8	4.4	4.7
Italy	3.4	3 4	3.5	3.4	3.9	3.6
Spain and Portugal .	3.4	2.8	2.7	2.2	2.2	2.0
Holland	5.0	5.4	5.9	4.2	3.7	4.5
Belgium	4.3	4.0	4.7	3.6	3.4	4.4
Scandinavia	2.5	2.4	2.3	2.2	2.3	2.1
Europe	78.9	74.6	74.0	71.0	73.4	71.3
United States	7.8	8.6	8.5	10.2	9.2	11.5
South America .	4.3	4.4	5.1	4.6	4.5	3.7
British Colonies .	9.0	12.4	12.4	14.2	12.9	13.5
The World	100.0	100.0	100.0	100.0	100.0	100.0

# D.—ARTICLES OF BULK EXCHANGED SINCE 1860.

	Million	e per Ant	um.	i	Millions per An		
Coal, tons Iron, ,, Meat, cwts	14.3	1871-80. 22.4 3.6 7.6		Grain, tons . Cotton, cwts.	4.4	1871-80. 10·1 19·8 5·0	1880. 10·5 23·2 5·9

# E.—Commerce of Decade ending December 1880.

		MILLIONS &	£	Annual Ratio
	Imports.	Exports.	Total.	to Medium Population.
United Kingdom .	8,714	2,778	6,492	£19 12 0
France	1,568	1,394	2,962	8 1 0
Germany	1,740	1,270	3,010	7 2 6
Russia	490	480	970	1 4 0
Austria	570	505	1,075	3 2 0 3 7 0
Italy	472	444	916	3 7 0
Spain and Portugal .	253	242	495	2 9 6
Belgium	562	441	1,003	19 8 0
Holland	680	432	1,062	27 5 0
Scandinavia	848	262	610	7 12 0
Greece, Turkey, &c	174	159	833	3 5 0
Europe	10,521	8,407	18,928	6 6 0
United States	988	1,122	2,110	4 14 0
Canada	179	151	830	8 2 0
South America	587	658	1,245	4 16 0
Australia	402	343	745	30 1 0
China and Japan .	289	271	560	1
Java	91	165	256	1 6 0
India	368	597	965	0 9 0
Egypt	52	136	188	8 15 0
Various	318	311	629	<b></b>
The World	13,795	12,161	25,956	

## F.—GROWTH OF BRITISH COMMERCE.

	_		Commerce			
Year.	Reign.	Imports.	Exports.	Total.	Inhabit	ant
1355	Edward III.	39	294	333	£0 2	10
1573	Elizabeth .	1.650	1,880	8,530	0 15	0
1614	James I.	2.141	2,091	4,232	0 16	6
1687	James II.	4,200	4,087	8, 287	1 10	2
1714	Anne	6,850	8,008	14.858	2 15	0
1761	George III.	10,292	16,039	26,331	4 1	3
1801	,,	81,420	86,930	68,350	4 6	6
1835	William IV.	48,912	47,021	95,933	8 15	4
1855	Victoria .	133,720	115,822	249,542	8 18	8
1880	,,	347,876	223,060	570,936	16 6	Õ

The returns before 1800 are for England only, after that date for the United Kingdom.

**Q** 

## COMMERCE.

# G .- BALANCE OF BRITISH TRADE.

			MILLION	& STER	LING.	
	Impor	s from	Expo	rts to	Surplus	Surplus
	1861-70.	1871-80.	1861-70.	1871-80.	Imports.	Exports.
France	298	421	230	283	206	
Germany	162	217	261	884	•••	216
Russia	169	200	69	101	199	•••
Austria	10	12	13	14	•••	5
Italy	83	39	41	74	•••	43
Spain	54	94	33	43	72	•••
Portugal	28	37	22	27	11	l •••
Belgium	71	131	68	128	6	ייַיַּ
Holland	110	175	145	193	•••	53
Denmark	20	40	14	23	23	•••
Sweden and Norway	56	97	22	53	78 11	
Greece	11 8	18 9	8	10 9	11	•••
Roumania	54	57	67	70	-	26
Turkey						20
Europe	1,079	1,547	997	1,362	267	
United States	360	773	233	299	601	•••
Brazil	59	63	55	68	. •••	1
River Plate	23	26	29	39		19
Chili	33	39	18	21	33	
Peru	35	45	13	17	50	;;
Central America .	19	24	25	30	•••	12
Mexico	11 60	51	13	10	***	7
Spanish Colonies .	4	31	33 2	37	41 3	•••
Portuguese " .	li	14	10	2 15	•	10
Java	113	132	54	78	113	
China and Japan .	158	114	60	40	172	***
Egypt	42	54	63	48		15
	l					15
Foreign countries	1,997	2,890	1,605	2,066	1,216	
India	345	299	197	241	206	
Australia	103	201	128	188		12
Canada	75	108	60	87	36	
West Indies	69	67	32	32	72	
Singapore	21	29	16	23	11	
Ceylon	33	36	8	10	51	
South Africa	23	42	18	49	•••	2
Hong Kong	7	11	21	35		88
Various	28	31	44	47	•••	32
I		l	I			·——!

704

Grand total . . | 2,701 | 3,714 | 2,129 | 2,778

824

524

712

292

1,508

Total colonies .

-104

# COMMERCE.

# H.-BALANCE OF UNITED STATES TRADE (1871-81).

	MILLIONS & STERLING.						
	Imports from.	Exports to.	Surplus Imports.	Surplus Exports.			
Great Britain .	329	735	•••	406			
France	104	112	•••	8			
Germany	86	114	•••	28			
Cuba	145	29	116				
Brazil	84	15	69				
Various	273	213	60	. •••			
Total	1,021	1,218		197			

# I.—BALANCE OF FRENCH TRADE (1871-80).

	Millions & Sterling.						
	Imports from.	Exports to.	Surplus Imports.	Surplus Exports			
Great Britain .	283	421		138			
Germany	141	151	•••	10			
Belgium	173	184	•••	11			
United States .	140	109	81				
Italy	146	79	67				
Russia	90	14	76				
Spain	59	53	6	. <b></b>			
Various	528	379	19				
Total	1,560	1,390	170				

# K .- Components of British Commerce.

	IMPORTS, I	lillions &.	Value per Inhabitant.				
	1870.	1880.	1870.	1880.			
Grain	36.7	69.5	£1 8 4	£2 1 0			
Cotton	53.5	42.8	1 13 6	1 5 0			
Manufactures .	26.5	33.7	0 16 8	0 19 6			
Meat	7.7	26.5	0 5 0	0 15 0			
Wool	15.8	26.4	0 10 <b>0</b>	0 15 0			
Sugar	17.6	28 0	0 11 6	0 13 6			
Dairy produce .	11.9	21.2	078	0 12 8			
Tea, coffee	15.4	19.3	0 9 9	0 11 4			
Timber	13.2	16.8	084	0 9 8			
Minerals	8.9	15.5	059	0 9 0			
Flax, &c	10 4	10.1	0 6 8	0 6 0			
Sundries	85 4	106.2	2 15 0	3 2 0			
Total imports .	303-0	411.0	9 13 2	11 19 8			

# COMMERCE.

# COMPONENTS OF BRITISH COMMERCE—continued.

	Exports,	MILLIONS &.	Value per Inhabitant.					
	1870.	1870. 1880. 18		1880.				
Cotton goods .	71.4	75.6	£2 5 0	£2 4 0				
Tana	26.5	29.7	0 17 0	0 19 0				
Woollens .	26.6	20.6	0 17 0	0 12 0				
Hardware .	16.4	19.5	0 10 6	0 11 0				
Times into	10.4	9.8	0 6 8	0 5 6				
Coal	5.6	8.4	0 8 6	0 5 0				
Qd_l	42.7	60.0	1 7 0	1 15 6				
British .	199.6	223 · 1	6 6 8	6 12 0				
Goods in transit	45.5	64-0	194	1 15 0				
Total exports	245.1	287:1	7 16 0	8 7 0				

See Imports, Exports, &c.

# L.—Commerce of France.

-					Millions &		Per
Year.		Imports.	Total.	Inhabitant (Shillings).			
1716				4	5	9	9
1750				13	14	27	21
1788				17	17	34	27
1901				17	12	29	21
1810				13	15	28	20
1820		•	•	15	18	83	22
1830				18	19	37	23
1840				32	34	66	38
1850				32	43	75	42
1860				76	91	167	89
1870			•	115	112	227	124
1882				199	144	343	181

# M .- COMMERCE BETWEEN FRANCE AND UNITED KINGDOM.

		1	Millions &								
Period.	Period.				Imports from United Kingdom.		Exports to United Kingdom.	Total Exchanged.	Trade of France.	Ratio with United Kingdom.	
						Per cent.					
1831-40		16	30	46	563	12					
1841-50		31	55	86	735	12					
1851-60		84	163	247	1.270	20					
1861-70		230	298	528	2,070	25					
1871-80	-	284	421	705	2,962	24					
1881		30	40	70	342	21					
51 years		675	1.007	1.682	7,942	21					

N.—DISTRIBUTION OF BRITISH COMMERCE.

	X	[ILLIOX8	&.	ALI	ALIQUOT PARTE.			
With—	1860.	1870.	1880.	1860.	1870.	1880.		
Colonies	89	120	174	23.7	21.9	24.9		
United States .	68	81	145	18.1	14.8	20.7		
France	31	60	71	8.2	11.0	10.1		
Germany	34	43	53	9.0	7.8	7.6		
Holland	18	81	42	4.8	5.6	6-0		
Russia	22	81	27	6.0	5.6	3.9		
Belgium	8	20	24	2.2	3.6	8.5		
Scandinavia	9	17	24	2.4	3.1	3.5		
Spanish-America .	13	26	22	8.4	4.7	3.2		
Spain and Portugal	11	14	21	8.0	2.5	3 0		
Brazil	7	12	12	1.9	2.2	1.7		
Egypt	13	23	12	3.4	4.2	17		
Turkey	11	14	11	8.0	2.5	1.6		
Italy	7	10	10	1.9	1.8	1.4		
Various	34	46	50	90	8.7	7.2		
The World	375	548	698	100.0	100 0	100.0		

The above includes not only imports and exports, but also goods in transit.

# O. - COMMERCE OF UNITED STATES.

		Millions	£ Sterling.	British	Trade, per Inhabitant (Shillings).		
Yes	ır.		Total.	With Great Britain.	Ratio.	Total.	With Great Brita:n.
					Per cent.		1
1790			9	5	55	45	25
1800			25	15	60	94	57
1810			26	16	62	72	44
1820			26	15	57	54	31
1830			25	14	56	39	22
1840			44	23	53	54	29
1850			64	82	50	54	27
1860			137	68	50	88	44
1870			172	81	47	89	42
1880			309	145	47	121	58

The above is exclusive of bullion.

# P.—Commerce of All Nations (1883-84).

	Millio	as de		Millions &.		
Great Britain France Germany Russia Austria Italy Spain and Portu Belgium Holland Scandinavia Turkey, &c.	Importa 890 . 199 . 163 . 71 . 62 . 51 . 62 . 51 . 62 . 87 . 38	Exporta. 296 141 164 78 75 47 86 54 57 80 84	United States Canada Australia S. America S. Africa India China Japan Java Egypt Various	Imports 140 . 28 . 64 . 61 . 9 . 66 . 24 . 6 . 12 . 7 . 66	Exporta- 150 21 52 74 9 85 21 7 14 14 67	
Europe .	. 1,206	1,012	World .	. 1,692	1,526	

# COMPANIES, JOINT-STOCK.

# A .- New Companies in 1881.

				MILLIC	NS &.	New Capital
Great Britain				Projected.	Established.	per Inhab.
	•	•	•	168	66	£1 18 0
France .		•		160	94	2 11 <b>0</b>
Germany		•		70	50	120
Austria .	•	•	•	40	28	0 15 <b>0</b>
Tota	1			438	238	£1 12 0

## B.—REGISTERED IN GREAT BRITAIN SINCE 1862.

Years.	Number.	Capital, Millions &.	New Capital. Per Annum, Millions £.	Average Capital per Company.
1862-70	6,179	1,010	112	£163,000
	10,443	930	93	90,000
	1,885	168	168	121,000
	1,471	217	217	148,000

# 108 COMPENSATION—CONSCIENCE-MONEY.

# C .- Capital of New Companies (Great Britain).

		Millions &.					
Years. 1862-80 1881 1882	:	Still-born. . 1,080 . 102 . 159	Established. 860 66 58	Total. 1,940 168 217			
T	'otal	. 1,341	984	2,325			

# D.—Companies Established (Great Britain).

				MILLIONS E.			
Railways				1381.	1882.		
Electricity			•	. 8	12		
Lands .	•	•	•	. 4	6		
Mining	•	•	•	. 6	8		
Banks .			•	. 4	· 2		
Sundry		•	•	. 26	13		
	To	tal		. 66	58		

### E.—Companies Established in all Nations.

			MILLIONS &.					
Years.			Ā	mount, Capital.	Annual Average.			
1871-74	•	•	•	1,230				
1875–78			•	420	105			
1879-82	•	•	•	820	205			
	Total			2,470	206			

# F.-FRENCH COMPANIES IN 1881.

Banks					M	illions & 33
Railways						8
Newspape	rs					3
Newspape Real estat	e.					14
Mining						4
Various						32
		To	otal			94

**COMPENSATION.** — The railway companies of Great Britain pay £1300 a day for injuries done, through their culpable neglect, to passengers or merchandise.

CONSCIENCE-MONEY.—Between the years 1870 and 1880 the average received by the Chancellor of the Exchequer, for unpaid taxes, was £9100 per annum.

#### CONSOLA

### A.—QUOTATIONS OF NATIONAL DEBT SINCE 1740.

Period.		Maximum, Minimum.		Average.	Debt, Millions &.	
1740-60 .	•	104	. 82	98.5	78	
1761-80 .		91	61	82.1	139	
1781-1800 .		97	47	67.2	240	
1801-20 .		84	50	64.9	841	
1821-40 .		97	69	85.8	781	
1841-60		102	79	93.4	786	
1861-81 .		108	84	93.1	776	

### B.—Holders of Funds.

Average. £100,000				1830. 172	1848. 177	1880. 283
50,000			•	1.810	1.550	1.892
10,000				22,189	20,561	19,140
8,000	•			124,014	120,487	112,077
500	•	•		182,960	141,352	103,122
To	tal			281,145	284,127	286,514

Unclaimed dividends in March 1882 amounted to £3,027,000. For French funds, see *Rentes*.

consumption.—In England and Wales 14 per cent. of males, and 13½ per cent. of females, die of consumption. In 1880 in the United States the deaths from consumption were 92,210, or 13 per cent. See pages 147 and 349.

CONVEYANCES.—London cabs carry 30 million, Paris cabs 18 million passengers yearly; the first earn £2,200,000, the second, £1,080,000 per annum. The London Omnibus Co. has 1620 busses, carries 54 million passengers yearly, for £550,000. The Paris local traffic is as follows:—

		Million Passengers.	Receipts.	Per Passenger, Pence.
Tramways .		. 119	£740,000	1.2
Omnibus		. 90	690,000	1.9
Steamboats, &c.	•	. 25	175,000	1.7
Total .		. 234	£1,605,000	1.6

The Paris local traffic was 72 millions in 1860, rising to 108 millions in 1870, and 234 millions in 1880.

The tramways of the United Kingdom carried 206 million passengers in 1880, averaging 2d. each. See Tramways, Railways, Passengers, Cabs.

### 110 CONVICTS—CO-OPERATIVE SOCIETIES.

### CONVICTS .- See Crime, Prisons.

COOLIES.—The emigration from India averages 22,000 yearly, the number registered abroad in 1880 being 335,000, viz.:—

Mauritius . 141,000 | Bourbon . . . 43,000 | Natal . . 18,000 | Demerara . 54,000 | Trinidad . . 26,000 | Jamaica, &c. 53,000

Numbers of Chinese coolies emigrate to Cuba and Peru, where they are ill-treated. Cuba imported 116,000, in the years 1866-73, and refused to let them return to China on the expiration of their contracts; 67,000 died. The number imported into Peru in the year 1871 was 38,650, of whom many were put to death. In 1880, in one province 2000 were massacred.

### CO-OPERATIVE SOCIETIES.

#### A.—GREAT BRITAIN.

Year.			Societies,	Thousand Members.	Capital, Thousands &.	Sales, Millions &	
1861			 66	38	365	1.1	
1871			749	249	2,530	8-2	
1881			1,118	1,083	6,850	24.4	

### B.—BALANCE-SHEET OF FIVE PRINCIPAL SOCIETIES.

Purchases Wages .	:	. £	Rent, gas, &c. Net profit .	•	:	£23,000 40,000
_		Sales	 £4.278.000	)		

#### C.—German, Schultz-Delitsch, Societies.

Years,			Societies.	Thousand Members.	Reserve.
1860			133	32	80
1870	•		740	815	2,200
1880			3,123	1,108	8,480

The first society was established at Rochdale, Lancashire, in 1844, by 28 workmen, with a capital of £28. The shares of some of the London societies are now worth 105 times the amount paid on subscription. The Schultz-Delitsch societies in Germany have an effective capital of 18½ millions sterling, and their turn-over for 1880 was 140 millions sterling.

#### COPPER.

#### COPPER.

#### A.—PRODUCTION.

				FINE COPE	er, Tors,	
			1850.	1860.	1870.	1880.
Great Britain			11,800	13,540	7,220	3,440
France .			2,300	2,500	4,900	5,100
Germany .			1,650	3,200	6,850	10,140
Russia .			6,000	5,500	5,500	6,100
Spain .			200	300	1,100	21,300
Sweden .			2,300	2,200	2,000	1,600
Austria, &c.			1,600	1,900	2,000	2,200
Europe.			25,850	29,140	29,570	49,880
United States			2,700	5,530	12,650	20,260
Chili .			14,300	25,100	30,200	36,800
Australia			2,400	7,600	9,700	13,100
Tot	tal		45,250	67,370	82,120	120,040

The production increases rapidly in the United States, the yield for 1881 being 34,200 tons fine copper, valued at £2,200,000. The above table does not include Japan, which produces 3000 tons yearly, all being retained for home consumption. The ratio of copper to copper ore is as follows:—

		(	er cent. of Pure		Per cent. of Pure Copper.
Germany			3	England .	. 7
Austria			4	Australia .	. 12
France	•	•	5	United States	. 18

Ores vary from 50 to 80 shillings per ton, and refined copper averages £70 a ton.

## B.—BRITISH COPPER TRADE.

Year.	¥		ousands.	Value, T	Fine		
I CALL.		Imported.	Exported.	Imports.	Exports.	Copper, per Ton.	
1850 .		51	11	£1,412	£1,080	£102	
1851-60		78	26	2,254	2,531	98	
1860 .		109	31	3,104	3,153	107	
1861-70		133	46	4,016	3,844	89	
1870 .		137	52	4.039	3,772	76	
1871-80		147	56	5,151	4,413	78	
1881 .		182	65	4,593	4,284	68	

The imports include, besides copper, a quantity of "regulus," or half-smelted ore.

# 112 CORONERS INQUESTS—CORPULENCE.

## C.—BRITISH COPPER MINES.

## ANNUAL YIELD OF COPPER, AND VALUE.

Period. 1725–45	Tons. 560	Value. £84.000	Period. 1801-20	Tons. 5,880	Value. £720.000
1746-65	1,030	160,000	1821-40	13,220	1,360,000
<b>1766</b> –85	2,020	290,000	1841-60	12,840	1,355,000
1786-1800	2,710	430,000	1861-80	8,070	686,000

CORONERS' INQUESTS.—Average, 5 per cent. on the number of deaths yearly in England and Wales:—

### A .- RETURNS FOR 1879-1881.

		1879.	1880.	1881.
Suicide		1,941	1,930	1,918
Murder		302	309	356
Drink		418	447	•••
Hunger		312	286	•••
Accidents .		13,850	13,676	11,404
Natural deaths	•	10,233	9,940	•••
Tota	d.	27,056	26,588	27,466

### B.—ANALYSIS OF 1879.

			Males.	Females.	Total.
Executed .			13	4	17
Murder			75	78	153
Homicide .			97	52	149
Drink			241	177	418
Hunger			188	124	312
Suicide			1,461	480	1,941
Accidentally drown	ned		2,785	905	3,690
Killed by cabs			225	130	355
,, by railways			1,120	15	1,135
,, in mines			1,037	•••	1,037
Sundry accidents			4,941	2,675	7.616
Natural deaths	•	•	6,050	4,183	10,233
Total			18,233	8,823	27,056

Inquests cost on an average 64 shillings each. See Deaths (violent).

### CORPULENCE.

Name.		Weight, Lbs.		Age.	Residence.	
James Mansfield			476	82	Debden, Mon.	
Mr. Bright .			596	29	Maldon, Ess.	
Dan. Lambert			739	40	Stamford, Lin.	

# COTTAGES.—To pay 6 per cent. on cost:—

Rooms,	Cost.	Rent, Shillings per Week.
3	£120	8
5	160	4
6	200	5

The Peabody buildings are rented at 2 shillings per room weekly, but the cost of site in London is considerable. The Société Montmartre in Paris has also built workmen's tenements, averaging 9 shillings a week, or double the Peabody average. See Duellings.

### COTTON.

	A.—	-Produ	CTION IN	MILLIONS	LBS.	
		1830.	1840.	1860.	1870.	1880.
United Stat	es .	350	880	1.870	1,540	3,161
India .		194	212	420	625	540
	•	18	80	61	240	282
Egypt .	•	74	70	40		
Various .	•	74		40	69	56
Total .		636	1,192	2,391	2,474	4,039
]	B.—	Consu	MPTION IN	MILLIONS	LBS.	
		1830.	1840.	1860.	1870.	1880.
Great Britai	n.	250	454	1,140	1,101	1,404
United Stat	es .	52	135	410	530	961
Germany .		56	120	220	260	390
France .		87	110	215	250	840
Various .	•	162	231	286	239	649
Total .		607	1,050	2,271	2,380	3,744

## C.—COTTON MANUFACTURES.

	Million Spindles.		Operatives, Thousands.	Cotton, Lbs per Operative.	Manu- factures, Millions £.
Great Britain .	40.2	1,404	482	2,940	95
United States .	11.2	911	260	3,510	74
Germany	5.4	390	150	2,600	24
France	4.8	340	200	1,700	20
Russia	3.4	140	180	780	18
Austria	2.2	150	100	1,500	13
Spain	1.6	100	80	1,250	9
India	1.2	80	80	1,000	8
Italy	1.0	90	50	1,800	8
Belgium and Holland	1·1	56	36	1,550	6
Switzerland, &c.	2.2	73	55	1,360	7
Total	74.3	3,744	1,673	2,240	282

COTTON.

# D.—BRITISH COTTON INDUSTRY.

	1	Millions.	Value, Millions £.			
Year.	Consumed, Raw Cotton. Lbs.	Produced, Cloth, Yards.	Exported, Yarn, Lbs.	Raw Cotton,	All Product.	Net.
1820 .	119	425	23	7	27	20
1821- <b>3</b> 0	181	620	39	6	28	22
1880 .	245	795	64	7	32	25
1831-40	886	1,065	90	11	84	23
1840 .	452	1,445	118	11	38	25
1841-50	521	1,666	136	11	38	25
1850 .	588	2,025	124	17	42	25
1851-60	852	2,980	171	24	58	34
1860 .	1,140	4,150	197	81	79	48
1861-70	793	2,890	186	43	76	83
1870 .	1,101	4,025	186	46	93	47
1871-80	1,270	4,602	222	89	94	55
1881 .	1,471	5,345	255	39	95	56

# E.—PRODUCTION OF COTTON CLOTH (GREAT BRITAIN).

Year.		Million Yards	Value,	Pence	
Ibar.	Made.	Exported.	Home Vse.	Millions £.	per Yard
1820	425	249	176	22	12.4
1821-30.	620	340	280	23	8-9
1830	795	445	350	26	7.8
1831-40.	1,065	589	476	27	6.1
1840	1,445	791	654	28	4.6
1841-50.	1,666	965	701	28	4.0
1850	2,025	1,348	677	83	3-9
1851-60.	2,980	1,988	992	46	8.7
1860	4,150	2,765	1,385	63	3.7
1861-70.	2,890	2,444	446	59	4-9
1870	4,025	3,267	758	71	4.2
1871-80.	4,602	3,693	909	73	3.8
1881 . ,	5,845	4,777	568	75	3.3

# F .- RESULTS OF BRITISH COTTON MANUFACTURES.

				V:	Ratio of		
				Raw Cotton.	Manufactures.	Net Remilt.	Result, per Cent.
1821-40	_	-	•	170	620	450	72
1841-60				850	960	610	63
1861-70				430	760	830	44
1871-81	•	•	•	429	1,035	606	58
Total,	81 :	ye <b>a</b>	rs	1,379	3,375	1,996	59

# G.—Export of British Cotton Goods.

Year.	Mills	ons.	Value.	Exports per Inhabitant.			
	Yarda, Cloth.	Lbs. Yarn.	Thousands.	Yards, Cloth.	Lbs. Yarn.	Value, Shillings.	
1820 .	249	23	£16,480	12	1	17	
1821-80	340	39	17,210	15	2	15	
1830 .	445	65	19,420	19	8	16	
1831-40	589	90	21,390	23	4	16	
1840 .	791	118	24,730	29	5	18	
1841-50	965	137	24,215	35	5	17	
1850 .	1,348	131	28,280	50	5	21	
1851-60	1,988	171	88,030	70	6	27	
1860 .	2,765	197	52,010	95	7	36	
1861 -70	2,444	186	59,620	81	4	40	
1870 .	8,267	186	71,415	105	6	47	
1871-80	3,693	222	71,980	110	7	43	
1881 .	4,777	255	79,090	135	8	45	

# H .- PLAIN AND PRINTED EXPORTS (BRITISH).

Tear.	Million	Yards.	Value, T	housands.	Per Yard, Pence.	
	Plain.	Printed.	Plain.	Printed.	Plain.	Printed
1820 .	114	135	£5,510	£7,705	11.6	13.7
1821-30	172	168	<b>5,8</b> 90	7,220	8.2	10.3
1830 .	245	200	6,625	7,590	6.5	9.1
1831-40	314	275	6,812	7,516	5.2	6.5
1840 .	433	358	7,830	8,492	3.6	5.6
1841-50	584	881	8,340	7,710	3.4	4.9
1850 .	758	590	9,597	12,277	3.0	5.0
1851-60	1,252	736	15,330	14,790	2.9	4.8
1860 .	1,790	975	22,954	19,188	3.1	4.7
1861-70	1,606	838	28,110	20,040	4.2	5.7
1870 .	2,294	973	83,922	22,823	3.5	5.6
1871-80	2,592	1,101	32,740	25,320	3.0	5.5
1881 .	3,361	1,416	37,170	28,755	2.6	4.0

# L-RATIO OF PLAIN AND PRINTED EXPORTS.

	1	Quantity.		Value.			
	Plain.	Printed.	Total.	Plain.	Printed.	Total.	
1821-40	52	48	100	46	54	100	
1841-60	61	39	100	51	49	100	
1861-70	66	34	100	58	42	100	
1871-81	70	80	100	57	43	100	

#### 116

## COTTON.

## K.—Consumers of British Cotton Goods (1880).

	Million Yarda,	Million Lbs. Yarn.	Total Value (Thousands omitted).	Ratio.
India	1,812	48	£20,010	28· <b>8</b>
China and Japan.	508	47	8,185	11.6
Turkey and Egypt	528	12	7,680	11.0
South America .	491	•••	6,740	9-7
Europe	818	94	10,830	14-9
West Indies .	122	•••	1,810	26
United States .	78	•••	1,750	2.5
Various	644	15	18,130	18-9
Total	4,496	216	£69,585	1000

## L-Production of Cotton Yarn, Great Britain.

	Milli	on Lbs.	Ratio	Spun Yarn,	Spun Yarn,	
Year.	Spun.	Exported.	Exported, per Cent.	Value (Thousands).	Lbs. per Inhab.	
1820	108	23	21	£13,510	5	
1821-30	163	39	24	11,330	7	
1830	223	64	28	13,960	9	
1831-40	303	90	30	17,705	12	
1840	407	118	29	23,680	15	
1841-50	469	136	29	25,450	17	
1850	529	124	23	25,930	20	
1851-60	767	171	23	84,880	27	
1860	1,027	197	19	51,240	35	
1861-70	714	136	19	59,470	24	
1870	991	186	19	78,360	32	
1871-80	1,142	222	19	71,110	84	
1881	1,324	255	19	68,470	38	

## M.—PRICES OF COTTON, YARN, CALICO, GREAT BRITAIN.

	1	Penoe,	Ratio.			
Years.	Raw Cotton, Lbs.	Yarn, Lbs.	Calico, Yards.	Cotton.	Yarn.	Calico, Yarda
1802-10 .	22.2	39	20.5	100	177	93
1811-20 .	21.3	33	16.8	100	155	79
1821-30 .	8.3	17	8.2	100	205	99
1831-40 .	7 · 9	14	5.2	100	177	66
1841-50 .	5.3	13	3.4	100	245	64
1851-60 .	5-9	11	2.9	100	186	49
1861-70 .	12.8	20	4.2	100	156	33
1871-80 .	7.1	15	8.0	100	211	42
1881	6.3	13	2.2	100	206	35

#### COTTON.

## N.—Cost of Production (1880).

#### PER 100 YARDS, PENCE.

			Calico.	Prints.		
British		•	. 276	384		
American			 . 424	592		
Greek			. 353	•••		
Chinese			. 310	510		
German	•		. 298	408		
French			. 312	425		

### O.—LENGTH OF FIBRE.

		Inches.	1		Inches.
See Island		1.61	Brazilian .	•	. 1.17
Egyptian		1.41	New Orleans		. 1.02
Peruvian		1.30	East Indian .		. 0.89

## P.—Crop of United States.

_	Million	s of Lbs.	Ratio of	Price per	Production, Lbs. per Inhabitant.	
Year.	Стор.	Exported.	Exports, per Cent.	Lb		
1803	41	40	98	17d.	7	
1810	99	95	96	15	14	
1820	135	125	92	13	14	
1830	350	298	85	8	27	
1831-40 (aver.)	720	610	87	6.2	48	
1840	878	744	84	4.5	52	
1841-50	1,140	920	80	4.2	57	
1850	890	665	75	6.2	39	
1851-60	1,610	1,260	78	5.3	60	
1860	1,880	1,446	77	5.2	60	
1861-70	920	505	55	18.2	27	
1870	1,540	1,010	66	10.3	40	
1871-80	2,123	1,465	70	7.0	46	
1881	3,161	2,170	69	6.1	63	

## Q.—Cotton Cultivation.

	Acres, Tuousunds.	Crop, Millions Lbs.	Value, Millions £.	Lbs. Cotton per Acre.
United States .	13,613	3,161	63.4	234
India	5,200 872	540 282	12·3 9·2	104 324
Brazil	150	42	1.2	280
West Indies, &c	100	14	0.4	140
Total	19,935	4,039	86.5	202

One man can cultivate 12 acres, or, with machinery, 30 acres. Seed cotton weighs 3 times as much as ginned cotton or cotton-wool, the seed forming two-thirds. Thus, in the above table, in the United States, a yield of 234 lbs. cotton means that before ginned the crop averaged 700 lbs. seed-

cotton per acre.

In Table C. the value of manufactured cotton goods in United States, Russia, and Spain, is artificially enhanced by protective tariffs. The consumption of cotton per operative is higher in United States than England, because the Americans have a greater proportion of men than in England in the mills. In 1881 Great Britain manufactured 5350 million yards of cotton-cloth, and exported 4800 million yards, home consumption being only one-tenth of the quantity produced. Great Britain consumes one-third of the world's crop of cotton, but produces only 27 per cent. of the cotton-cloth, the rest being exported as yarn. England gets her raw cotton one halfpenny per lb. cheaper than Germany.

COURTS-MARTIAL.—In the British army the number of men tried was:—

Year,			Number.	Ratio of Army,
1865			18,590	8.4
1875			12,217	6.7
1880	_		13.711	7.2

Almost one-fourth of the offences (23 per cent.) proceeded from drink. The number of men discharged for bad conduct was:—

The average for the decade was 1752, or less than 1 per cent. of the force.

#### COUSINS, MARRIAGE OF.

	Per 1000 Marriages,										r 1400 Tiag <b>es.</b>
London		•	•		15	Nobility		•			45
England	•	•	•	•	21	France	•	•	•	•	20

Barrenness is 3 times more frequent than in ordinary marriages. The idiots in asylums in England show 14 per cent. children of cousins.

According to Huth 7 per cent. of deaf and dumb children (1861) were found to be children of cousins. In Italy 9 per cent. of such marriages are barren, or more than double the ordinary ratio.

#### COWB.

		Number, Thousands.	Cows per 100 Inhab.	Slaughter, Thousands.	Tons Beef, Thousands.	Beef, lbs per Inhab,
United Kingdom		9,905	28	1.980	690	44
France	3	11,480	30	2,300	550	34
Germany		15,790	34	3,160	810	40
Russia		22,770	29	4,550	1,050	30
Austria		13,133	35	2,630	590	36
Italy		3,490	13	700	160	13
Spain and Portuga	al.	3,623	18	720	166	19
Belgium and Holl	and	2,708	29	540	170	36
Scandinavia .		4,553	54	910	240	60
Switzerland .		1,036	36	200	50	40
Roumania, &c.		3,858	46	570	130	34
Europe .		92,346	30	18,260	4,606	35
United States .		33,360	65	6,660	1,750	75
Canada		2,702	64	540	135	65
Australia		7,863	270	400	100	84
River Plate .		18,390	610	1,000	200	150
Algeria		1,204	40	200	50	37
Cape Colony .		1,330	110	100	25	50
The World .		157,195	43	27,160	6,866	38

For consumption of beef, see Meat.

**CREMATION.**—A body weighing 140 lbs. produces 3 lbs. ashes; time for burning, 55 minutes.

### CRIME.

### A.—United Kingdom since 1840.

Annual Average of Committals,

Period.		England.	Scotland.	Ireland.	United Kingdom.
1840-49 .		27,910	4,045	25,220	57,175
1850-59 .		23,924	8,860	13,640	41,424
1860-69 .		19,230	3,315	5,060	27,605
1870-79 .	•	15,290	3,110	4,412	22,812

## B.—Average Committals per 100,000 Inhabitants.

Period.	England.	Scotland.	Ireland.	United Kingdom.
1840-49 .	164	149	302	204
1850-59 .	126	130	<b>2</b> 27	151
1860-69 .	91	104	91	92
1870-79 .	64	89	84	69

## C.—United Kingdom, Convictions since 1840.

C. — Child Hindbon,	CONVICTIONS								
	Annual Averag	e							
Period. England. So	otland. Irelan	d. United Kingdom.							
	3,029 11,78								
1850-59 18,291	<b>2,902 7.7</b> 0	5 28,898							
	2,463 2,91								
	2,190 2,49	2 16,402							
D.—RATIO OF CONVICTIONS	то Сомитт	ALS, PER CENT.							
Period. England, Sc	otland. Irelan	d. United Kingdom.							
1840-49 75	75 47	63							
1850-59 76	74 58	70							
1860-69 76	74 58	<b>72</b>							
1870-79 78	71 56	72							
E.—England and Wales (1879).									
Number	1	Number							
of Crimes.	1	of Crimes.							
Murder 148	Rape, &c.	521							
Homicide 234	Burglary	5,297							
Attempt to kill . 814	Assault, &c.	8,211							
Infanticide 88	ļ _								
Total		15,318							
The above does not include	le cases of lar	rceny, which are							
counted among minor offences									
	•								
F.—ARRESTS FOR CRIME, E	NGLAND AND	Wales (1879).							
The state of the s	Malea Fema	•							
Arrested	18,377 5,28	23,658							
Discharged	6,135 2,21								
	12,242 3,07								
Acquitted		2,788							
Convicted		12,525							
G G	. C /	1070\							
G.—Sentences on	•	•							
Death 34	Imprison. und								
Penal servitude for life 10	Do. under 6 1	nonths . 5,887							
Do. over 10 years . 91	To Reformate								
From 2 to 10 years . 1,401	Fined	354							
Total	1	2,52 <b>5</b>							
HMinor Offences, En	GLAND AND V	VALES (1881).							
Offences,	1	Sentences.							
Drunkenness 174,480	Fined .	367,334							
Larceny 50,800	Prison, 6 mor								
Injury to property . 21,030	Under 6 mon								
Against bye-laws . 46,357	Bailed .	. 16,003							
Assault 84,284	Reformatory	3,601							
Against education laws 67,350	Various .	. 44,980							
Sundry 224,736	Discharged	. 138,071							
		<u>———</u>							
Total 669,037	Total	669,037							

#### L-Criminal Population of England (1880).

Locality. Convict prisons Local prisons. At large	:	•	Malea. 9,184 14,607 31,992	Females. 1,113 3,420 9,056	Total. 10,297 18,027 41,048
Total		•	55,783	13,589	69,372

## K .- RATIO OF AGES IN LOCAL PRISONS (1880).

Under 21	years				20.6
21 to 40	٠.,				54.7
41 to 60	,,				20.8
Over 60	**		٠.	•	3.9
					100-0

#### L-Scotland, Prison Population.

Year.		Males.	Females.	Total.	Per 100,000 lubabitants.
1840		1,362	<b>686</b>	2,048	80
1850		2,042	1,017	3,059	108
1860		1,106	1,059	2,165	71
1870		1,726	1,099	2,825	83
1880		2,065	1,008	3,073	83

#### M .- MURDERS IN ALL COUNTRIES.

				Annual Average.	Ratio per Million Deaths.
England .			•	877	711
Ireland .				91	883
France .				662	796
Germany.				995	837
Russia .				2,400	970
Austria .				590	930
Italy .				2,470	8,024
Spain .				1,600	3,200
Belgium .				90	720
Scandinavia				120	800
United State	8 .	•	•	2,060	2,460
Total				11,455	1,432

The above includes homicides, and in some countries infanticide. The deliberate murders (excluding infanticide and manslaughter) are about one-third of the above, and in Spain and Italy one-sixth.



122

#### CRIME.

## N.—FRANCE, RATIOS OF CRIMINALS.

Age. Under 20 20 to 40 40 to 60 Over 60	:		18 54 23 5	Occupation. Men of fortune Servants Tradesmen Artisans, &c.	:	6 13 14 67
7	[otal		100	Total		100

Of the total only 64 per cent. could read and write. The ratio of habitual criminals has increased as follows:—

			Per Cent.					Per Cent.
1830 .			8	1870	•			41
1848 .	•	•	17	1880	•	•	•	48

Thus one-half of the crime in France is committed by professional malefactors.

#### O.—Convicts in Penal Servitude.

	Number,	Average.	Convicts per 1	Convicts per 100,000 Inhab.		
Period.	England.	France.	England.	Prance.		
1830-40 .		16,820		511		
1841-60 .		18,330	·	515		
1861-70 .	10,680	18,210	506	489		
1871-80 .	9,014	16,630	366	458		

#### P.—CRIME IN BELGIUM.

Year.	Number of Convicts.	Per 10,000 Inhab.	Year.	Number of Convicta	Per 10,000 Inhab.
1840	. 9,012	23	1860 .	10,810	23
1850	. 11,133	25	1876 .	12,420	24

#### Q.—CRIME IN FRANCE.

				Offences	per 100,000 Inhabitanta.			
Period.		Period. Grave.		Grave.	Minor.	Total.		
1830-39	<u> </u>		[	23	208	231		
1840-49			.	21	298	319		
1850-59			. 1	18	424	442		
1860-69			.	11	387	398		
1870-79	:			12	432	444		

In Italy the average number of crimes in the years 1874-76 was 7085, of which 2470 were murders or homicides.

CRISES.—The most remarkable since the middle of the 18th century have been as follows:-

1763. Amsterdam, originating with the house of De Neufville. Failures, 20 in Holland, 20 in England, 37 in Hamburg.
1773. Failures in Holland exceeding 10 millions.
1799. Hamburg, 32 failures, 2 millions. Panic at Liverpool. Parliament lent half-a-million in Exchequer bills on goods.

1814. England, 240 banks suspended. 1825. Manchester, failures 2 millions.

1831. Calcutta, failures 15 millions.

1837. United States, "Wild-cat" crisis; all banks closed.

1839. Bank of England saved by Bank of France. Severe also in France, where 93 companies failed for 6 millions.

1844. England. State loans to merchants. Bank of England reformed.

1847. England, failures 20 millions; discount 13 per cent.

1857. United States, 7200 houses failed for 111 millions.

1866. London, Overend-Gurney crisis; failures exceeded 100 millions.

CURRENT.—In the Pacific Ocean a bottle was thrown overboard in 4° S. and 119° W., and after 455 days was picked up, June 1881, in the Feejee Islands, having been carried 6700 miles, or 15 miles a day.

#### CUSTOMS.

#### A .- CUSTOMS-REVENUE OF ALL NATIONS.

		Amount (Thousands £).		Shillings, per Inhabitant.		
	1871-80.	1881.	Commerce, 1881.	1871-80.	1881.	
TAT NAVE TO STATE OF	1	9.77	Per Cent.			
United Kingdom .	. 20,110	19,184	3.36	12.5	11.6	
17	. 10,320		3.78	5.7	7.5	
Germany	. 8,640	9,630	3.28	4.0	4.2	
Russia	. 10,525		10.02	3.0	3.1	
Austria	. 2,610	3,050	2.38	1:5	1.6	
Italy	. 5,080		5.80	3.6	3.9	
Spain	4,410		12.10	5.5	5.7	
Portugal	. 1,790	2,160	15-22	8.5	10.1	
Belgium	. 780	1,010	0.87	3.1	3.9	
	. 415	430	0.36	2.2	2.2	
	. 950	980	5.42	10.0	10.0	
Sweden and Norway	2,390	2,515	7:05	7.6	7.6	
Europe	. 68,020		3.90	4.4	4.6	
	. 26,030	40,590	13.10	12.0	16.6	
Canada	2,715	2,880	8.23	13.0	12.8	
	4,250	6,226	6.11	34.0	43.0	
	6,680	7,310	20.32	13.1	15.2	
	2,220	2,330	2.33	0.2	0.2	
Egypt	780	905	4.51	4.0	4.4	
The World	110,695	134,345	5:10	3.9	4.4	

#### CUSTOMS.

#### B.—BRITISH CUSTOMS-REVENUE.

Year.		7	housands &	Ratio to Commerce.	Shillings, per Inhab.
1580			14	0.42	0.1
1614			178	4-22	0.8
1684			580	670	20
1720			1,555	10.40	5·1
1800			6,788	10-02	18-0
1827			21,009	28.10	18· <b>1</b>
1844			24,277	20.05	18.0
1866			21,276	4-95	14-2
1881	•		19,184	8.36	11.4

#### C.—Incidence of British Customs.

		Amo	Amount Paid by Classon					
		Rich.	Middle.	Working.	Amount.			
Spirits		£170,000	£1,350,000	£2,703,000	£4,223,000			
Wine		455,000	885,000	26,000	1,366,000			
Теа		160,000	1,288,000	2,526,000	8,974,000			
Coffee		11,000	90,000	212,000	818,000			
Fruits		35,000	285,000	190,000	510,000			
Tobacco, &c.	•	370,000	2,890,000	5,620,000	8,890,000			
Total .		£1,201,000	£6,808,000	£11,267,000	£19,276,000			

#### 1).—Incidence, per Head, of each Class.

			F	lich	•	M	idd	e.	Wo	rki	g.	1	<b>Tota</b>	1.
Spirits		•	£0	2	11	£0	2	10	£0	2	3	£0	2	5
Wine			0	7	10	0	1	10				0	0	10
Tea			0	2	9	0	2	9	0	2	1	0	2	3
Coffee			0	0	2	0	0	2	0	0	2	0	0	2
Fruits			0	0	7	0	0	7	0	0	2	0	0	3
Tobacco, &c.	•	•	0	6	5	0	5	6	0	5	0	0	5	5
Total .			£1	0	8	£0	13	8	£0	9	8	£0	11	4

The working classes form 69 per cent, the middle class 28 per cent, and the upper class 3 per cent of the population of the United Kingdom, as appears from the Probate returns (1877).

## . D

#### DEAP AND DUMB.

## A .- NUMBER IN VARIOUS COUNTRIES.

	Nur	nber.	Per Million Inhab.		
	1831.	1871.	1831.	1871.	
United Kingdom .	14,328	19,237	597	611	
France	20,189	21,130	630	603	
Germany	20,470	30,900	724	770	
Russia	27,834		631		
Austria	21,684	34,450	802	980	
Italy	12,618	19,800	628	702	
Spain	7,255	10,700	633	655	
Switzerland	3,976	6,820	1,996	2,620	
Belgium and Holland	2,166	3,050	335	358	
Denmark	1,260	·	1,114		
Sweden and Norway.	2,397	5,540	605	920	
United States	6,030	18,150	460	480	

## B.—United Kingdom, per Million Inhabitants.

			1831.	1861.	1871.
England			545	581	504
Scotland			552	753	633
Ireland			664	975	1,028
United Kin	ngdor	n.	597	701	611

#### C .- RETURNS FOR UNITED STATES.

Tear	Year. Number. Per Million Inhabitants		Number	Per Million	Ratio of Sex.		
I GAL .			Inhabitants.	Malca.	Females.		
1850	•	•	9,803	427	55	45	
1860			12,820	413	55	45	
1870			16,205	422	55	45	
1880		. •	<b>33,8</b> 80	678	56	44	

Sex ratio is in most countries 55 males to 45 females, but in Italy 58 to 42.

DEATHS.

#### 126

#### DEATHS.

#### A.—DEATH-RATES OF COUNTRIES.

	1861-70.	1871-90.	20 Years
England	22.6	21.3	21.9
Scotland	<b>2</b> 2·1	21.8	21.9
Ireland	16.8	18:3	17 5
United Kingdom	21.4	21.0	21-2
France	22.9	24.3	23.6
Germany	27·1	27·1	27:1
Austria Proper .	30.4	81.2	30.8
Hungary	38.7	40.1	38-9
Italy	30.1	29.7	29.9
Spain .	29.7	29.7	297
Belgium	<b>2</b> 2·8	22.6	22.7
Holland	24.9	24.3	24.6
Denmark	20.1	19:3	19.7
Sweden	20.0	18:4	19-2
Switzerland .	24.0	24.0	24.0

Where the same rate is quoted above in both decades it means that the rate previous to 1870 is only an estimate.

## B.—Death-rate of Cities (1878-80) per 1000 İnhabitants.

			,		
Alexandria	34.2	Dublin	27.1	New York 26-2	
Amsterdam	23.7	Edinburgh	20.2	Nottingham . 22.4	
Baltimore	21.1	Geneva	21.2	Oldham 22.8	
Belfast	28.2	Glasgow	25.3	Palermo 28.5	
Berlin	27.6	Hamburg	24.5	Paris 28-6	
Birmingham .	19.8	Havanna	45.7	Philadelphia . 20.3	
Bombay	33.7	Hull	23.8	Portsmouth . 19.7	
Bordeaux	26.7	Leeds	21.6	Quebec 22-9	
Boston	23.5	Leicester	21.8	Rio Janeiro . 39.4	
Bradford	21.1		26.1		
		Leipsic			
Breslau	32.2	Liverpool	26.7	Rotterdam 23.3	
Brighton	19.0	London	21.1	Rouen 31.3	
Bristol	19.6	Lyons	24.7	St. Louis 19.3	
Brooklyn	25.6	Madras	38.8	St. Petersburg . 51.4	
Brussels	23.9	Madrid	37.4	San Francisco . 18.1	
Bucharest	24.5	Manchester .	25.5	Sheffield 21-6	
Buda-Pesth	85.2		28.0	Stockholm 24.7	
Buenos Ayres .	30.1	Mexico	30.9	Sunderland . 20.9	
Calcutta	31.1	Milan	30.6	Turin 25-6	
	27-2		37-2	Valparaiso 64-6	
Chicago					
Christiania	18.8		32.8	Venice 22.7	
Copenhagen.	22.1	Naples	33·1	Vera Cruz 70.5	
Cork	26.1	Newcastle	21.8	Vienna 29.0	
Dresden	25.4	New Orleans .	22.7	Zurich 25.6	

## C.—Death-rate for Ages, per 1000 Inhabitants.

	Under &	5-10.	10-25.	25-45.	45-55.	55-65.	65–75.
England	63-6	6.6	5.5	10.2	17:4	81.8	64.8
United States .	58.8	10.1	5.4	10.8	17.6	27 2	51.4
France	75-6	9-2	8.8	12.7	16.6	28.3	66.3
Prussia	l l	9-2	6.4	11.5	18.6	83.0	64.5
Austria	1117	9.8	6.6	11.3	21.1	41.5	92.8
Switzerland .	l	8.5	6.3	11.6	19.3	38.4	82.5
Italy	110-6	11-6	7.8	11.7	17.3	33.1	70.1
Spain	106-2	117	8.8	12.9	23.8	42.0	95.0
Belgium	68.1	127	8.1	12.9	19.0	32.3	74.5
Sweden	57.6	8.0	4.8	8-2	14.7	27.4	62 6
Medium	81.5	9.7	6.8	11.4	18.5	33.5	72.4

#### D.—DEATHS ACCORDING TO SEASON.

	England.	France.	Holland.	Austria.	Italy.	Medium.
Spring .	. 110	117	88	115	88	104
Summer Autumn	. 96 . 95	88 86	91 126	82 91	105 100	92 100
Winter.	. 99	109	95	112	107	104
Total	. 400	400	400	400	400	400

Winter Half. London 54 York 56 Manchester . 57	Half. 46 44 43	100 100 100	Scotland . Sweden . Stockholm		Summer Half. 45 48 43	Total. 100 100 100
Chester . 58	42		Switzerland	56	44	100
England . 55	45		Germany	52	48	100

## E.—Deaths according to Months, 100 = Par.

Month. January		France.	Germany.	Month. London. July 89	France. 87	Germany. 94
February		112	100	August . 95	97	89
March .	. 124	110	113	September 113	102	94
April .	. 91	107	109	October . 84	96	92
May .	. 84	95	110	November 92	94	98
June .	. 99	88	94	December 127	98	103
6 Months	600	626	630	6 Months 600	574	570

## F.—DEATHS IN CLASSES (PROFESSOR CONRAD).

					Affluent.	Middle.	Working.
C . '11 1							
Still-born	•	•	•	•	28	53	53
0- 1 year					118	240	206
					95	192	220
5 <b>–</b> 15 ,,					48	49	58
15-20 ,,			•		35	24	21
20-30 ,,					86	63	64
80-60 ,,					247	204	222
Over 60 year	78	•	•		843	175	156
Total		_	_	_	7 000 E	1 000	7 000 E

#### G .- DEATH-RATE OF MARRIED AND SINGLE.

	SCOTLAND.		FRANCE.						
Age.	Всот	AND.	Ma	le.	Female.				
	Married.	Single.	Married.	Single.	Married.	Single			
15-20			38	8	12	7			
20-30	7.2	13.6	7	12	9	8			
30-40	10-2	16 0	7	12	9	10			
40-50	15.5	19.8	11	18	10	14			
50-60	22.8	27 · 4	18	29	16	23			
60-70	44.0	52.4	39	55	37	49			

The above table does not include widowed persons.

#### H .- DEATH-RATE IN PROFESSIONS (NEISON).

PER 1000 PERSONS, AGE 25 TO 65 YEARS, DEATHS PER ANNUM.

Ladies' maids				8.0	Catholic priests			18.3
Protestant cle	rgy			10.6				18.4
Barristers .	•			11.9	Surgeons .			19.1
Grooms .					Apothecaries	•		19.1
Physicians.						5		25 0
Valets .				16.7				27 0
Attorneys .	•		•	16.8				26 <b>6</b>
	All	Engla	ba.			18.0		

## L-DEATH-RATE OF CLERGY.

			Age.	
	•	25-45.	45-65.	25-65.
Church of England		5.4	15 · 8	10.1
Catholic priests, English .		9·7	26.9	15.7
German Protestant clergy		5.8	20 0	11·8
Population of Germany .		9.7	25.9	16.8
Austrian Catholic priests .		8.0	21.8	15-2
Austrian Greek clergy .		8.7	22.1	15.1
English male population .		11.5	<b>25 · 2</b>	18.4

This table is more modern than Neison's, and gives a lower death-rate for clergy.

## K.—Death-rates in Scotland. Age 45 to 55 Years.

	Per 10^0.		Per 1000.		Per 1000.
Farmers	. 12	Carpenters	. 17	Beer-sellers	. 28
Shoemakers	. 15	Miners	. 20	Scotchmen	. 19
Grocers			. 23	Scotchwome	n 16

## L.—Institute of France (1795-1870).

	Deat	h-rate.	Life-expectation, Years.		
Age.	Institute.	General Population.	Institute.	General Population	
85-40	12	13	32	29	
40-50	14	15	26	24	
50-60	21	22	18	17	
60-70	44	47	12	11	
70-80	82	90	7	61	

#### M.—American and English Rates compared.

	Annual Deaths per 1000 Inhabitants.							
Age.	Massachusetts.	Maryland.	United States.	England				
Under 5	65.8	51.7	58.8	63.6				
5-10	107	9.5	10.1	6.6				
10-15	5.1	5.4	5.3	3⋅8				
15-25	5.8	5.4	5.6	6.4				
25-45	11.9	10·1	10.8	10.2				
45-55	16.4	18.2	17.6	17.4				
55-65	26.3	28.1	27.2	31.8				
65-75	46.9	56.5	51.4	64.3				

## N .- FORTY YEARS OF ENGLISH DEATH-RATES.

	Death-rate per 1000 Inhabitants per Annum.						
Age.	1841-50.	1851-60.	1861-70.	1871-80			
Under 5	66.2	68.0	68.6	63.5			
5-20	7:3	7-2	6.3	5.3			
20-35	9.8	9.3	9.0	8.1			
35-55	15.1	14.6	15.2	15.3			
55-65	30·1	29.1	80.5	820			
65-75	64.0	62.0	63.0	65.0			

#### ENGLISH DEATH-RATES—continued.

	1	Malos.		Fernales.			
Age.	1841-60.	1861-80.	1841-80.	1841-60.	1861-80.	1841-80	
0-5	72.0	71-0	71.5	62-1	61.1	61.6	
5-10	8.8	7.5	8.1	8-6	7.1.	7-9	
10-15	5.0	4.2	4.6	5.2	4-2	4.7	
15-20	6-9	5.8	6.3	7.6	6-2	6.9	
20-25	9.2	8-0	8.6	8.8	7.4	8.1	
25-35	9.8	9.6	97	10-2	9.2	9.7	
85-45	12.7	13.7	13-2	12.6	11.8	12.2	
45-55	18-2	19.4	18.8	15.7	15.5	15.6	
55-65	81.4	88-9	32.6	27.8	28.4	28.1	
65-75	66.5	67.8	67.1	59-9	59-9	59-9	
75-85	147.4	147.4	147.4	135-2	1340	184.6	

			1	Per 1000	Inhabitants pe	r Annum.
Р	eriod.			Male.	Female.	Total Pop.
1841-50		•		23·1	21.6	22.4
1851-60			. 1	23·1	21.4	22.3
1861-70				23.7	21.4	22.6
1871-80			. 1	22.6	20.1	21.3

#### O.-ARMY DEATH-RATES.

#### FRENCH.

Station. France Algeria		•	1863-66. 12·3 24·3	Station. Italy . General	:	1963-66. . 35·1 . 14·5	

			Rus	British.		
Arm.				1841-52.	1857-61.	1879-80.
Infantry	•	•	•	42.0	21.0	6.2
Cavalry		•	•	23.0	14.0	5-2
Artillery				27-0	15.0	7-2
Average	•	•	•	38.0	19.0	6.7

## P.—DEATH-RATE IN BRITISH ARMY (1879-80).

Station		Arm.
Ireland	6.50	Cavalry 5.15
England	6.53	Engineers 6.27
Scotland	7.78	Infantry 6.51
India .	9.63	Artillery 7·19
General average	6.66	General average . 6 66

This does not include deaths in war.

The death-rate among or reforms was enormous, the being as follows:—	ur troop 18 avers	s before Dr. I ges for the y	Farr's barrack- rears 1818-40
Cape 15.5 Mau Canada 21.2 Madi	ritius ras	28.3   Bengs 30.5   Jamas 52.0   Sierra	ica
In the United Kingdor for cavalry, 15.5 for infar	n the ratry, and	ate from 1830 1110 for offi	0-40 was 15·3 cers.
Q.—English Ai	LE-BODI	ED MALES (1	879).
Death-	rate	•	Doath-rate
per 10 Civilians 10 02 Soldiers 6 66	3	Royal navy Merchant nav	per 1000. . 8:58 y . 19:10
Of 100 deaths in merc	hant sh	ipping, 55 are	from drown-
ing, 35 from sickness, and	1 10 fro	m various cau	1868.
R.—Death-rate in	British	COLONIES (	1876–80).
St. Helena 13-2   Cevle			-Kong . 25.6
Australia . 141 Jams	ica .		itius 28.3
	adoes .	. 23.8   Trinic	
Singapore 20·1   Bern	_	. 24·1   Deme	
S.—Death-rate	or Lo		
1725-50 39 9   1800		. 33.7   1874-	78 22.8
1751-99 38-8   1840-	-45 .	. 24.5   1879-	81 21.7
T.—Violent I	EATHS:	ALL COUNT	RIES.
		Number.	Ratio per
United Kingdom .		23,822	1000 Deaths. 33:1
France		16,373	19.7
Germany		24,592	21.4
Russia		18,500	7.4
Austrian Proper .		10,150	16·0
Italy		6,656	8.3
Spain		4,700	9.6
Switzerland	• •	2,550	38·2
Belgium		2,577	22·0 28·1
Denmark Sweden	• •	1,054 2,740	31·6
Norway	: :	1.290	37 · <b>7</b>
	• •		<del></del>
Europe		115,004	<b>16</b> ·2
United States (1870)		22,740	41.1
Total		137,744	<del>17·1</del>
The above total include	s 13.40	0 murders. 2	1.200 suicides.
and 103,000 accidental de			-,-:,

## DEATHS.

#### U.—Sexes of Violent Deaths.

	Per	Cent.	Per (	Cent
England . Scotland .	Male. . 72·6 . 73·7	Female. 27.4 26.3	fale. 89·7 72·5	Female. 80·3 27·5

## X .- VIOLENT DEATHS IN ENGLAND (1878).

Cause.	Males.	Females.	Total.	Per 1000 Deaths of Population.
Railways	1,077	75	1.152	2·1
Mines	1,076		1,076	2.0
Fire	619	859	1.478	27
Drowned (accid.)	2,824	842	8,666	6.8
Poisoned "	235	118	853	0-6
Caba &c	1,000	199	1,199	2-2
Fall	1,509	632	2,141	4.0
Sunstroke	184	42	226	0.4
Various	3,623	1,780	5,403	10.1
Accidental	12,147	4,547	16,694	80-9
Suicide	1,299	465	1,764	3.3
Murder	206	168	874	0.7
Executed	14	1	15	
Total	13,666	5,181	18,847	34.9

## Y .- Scotland, Violent Deaths.

Cause.					Number.	Per 1000 Deaths.
Drowned					721	9.3
Suicide		,			144	1.9
Drink			•		197	2.5
Exposure	·	·	·		58	0.7
Poison	÷	·	÷		55	0.7
Various	•	·	:	:	1,815	23.6
Total					2,990	38.7

## Z.—VIOLENT DEATHS, UNITED KINGDOM.

#### PER 1000 DEATHS.

Period.		England.	Scotland.	Ireland.	United Kingdom.
1840-60		34-2	82·3	•••	•••
1861-70		34.5	31.8	24.1	32.7
1871-80		34.3	35.5	21.1	32.6

#### AA .- Accidental Deaths per Annum.

	No. per Million	Ratio	of Sexes.	Percentage of Acci dental Deaths.		
	Inhab.	Male.	Female.	Drowned.	Burnt.	
England	670	74	26	22	9	
France	280	78	22	41	•••	
Prussia	407	76	24	l	•••	
Saxony	298	76	24		•••	
Bavaria	236	75	25		•••	
Hanover	896	79	21	l l	• •	
Austria	258	78	27	1 1	•••	
Switzerland	466		l	40	4	
Italy	181	75	25		•••	
Spain	202	80	20	24	8	
Belgium	830	82	18	27	•••	
Denmark	232		l	60	2	
Sweden	479	78	27	54	5 4	
Norway	681	•••		75		
Russia	201	•••	l	53	6	
United States .	623	67	83	16	24	
New York	668	•••		l l	•••	
London	665			l	•••	
Paris	682		l	<b></b> .	•••	

#### BB .- DEATHS FROM DRINK.

England Scotland Ireland.	:	•		Per Annum. 1,082 230 280	Per 1000 Deaths. 2.04 3.29 2.78	Italy Switzerland . Sweden .	Per Annum. 709 244 502	Per 1000 Deaths, 0.85 3.81 6.25
France .		•	•	872	1.05	Norway .	. 72	2.36
Belgium				456	3.83	New York .	324	12.08

#### CC .- INFANT MORTALITY.

#### PERCENTAGE WHO DIE UNDER 5 YEARS.

Norway				17	England		26	Austria .		36
Ireland				17	Belgium		27	Spain		36
Denmark			•	20	France		31	Russia		38
								Italy		89
Sweden	•	٠	•	22	Holland		33	Liverpool	•	46

Dr. Playfair states that in England 18 per cent. of children in the upper classes, 36 per cent. of those of tradespeople, and 55 per cent. of workmen's children, die before reaching their fifth birthday; too high an estimate.

#### DEBTS OF NATIONS.

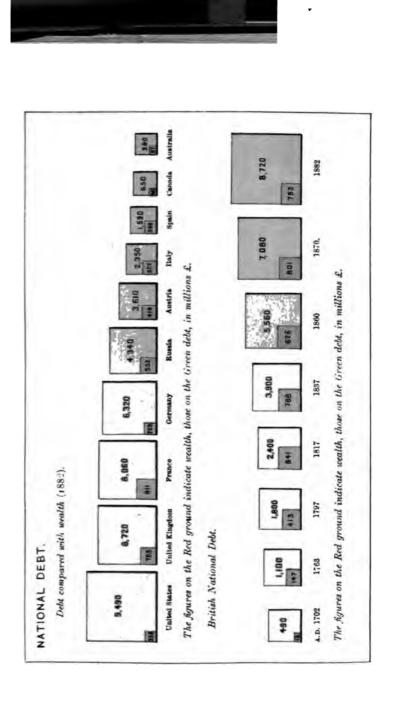
#### A .- Debts in Millions Sterling.

		1820.	1848.	1970.	1882.
United Kingdom		. 841	773	801	769
France		. 140	182	468	911
Germany		. 53	40	148	229
Russia		. 50	90	280	553
Austria		. 99	125	340	419
Italy		. 25	36	374	522
Spain		. 52	113	285	890
Portugal		. 8	17	59	94
Holland		. 110	114	76	80
Belgium		.	18	28	62
Denmark		. 4	12	18	10
Sweden and Norwa	y	. !	1	6	20
Greece	•	.	10	18	18
Turkey	•	.		92	110
Europe .		. 1,382	1,531	2,988	4,187
United States .		. 26	48	496	333
Spanish-America		. 4	62	144	237
Canada			<b></b>	17	40
Australia				37	97
India		. 29	51	108	156
South Africa .			•••	2	14
Egypt	•	•	!	37	106
The World .		. 1.441	1,692	3,829	5,170

The above includes funded and floating debt, and uncovered paper-money, but no municipal debts or railway guarantees.

The extra expenditure of nations since 1830 accounts for 3691 millions of debt, viz.:—

			Millions &
Railways and telegraphs			. 767
Crimean War			. 305
War of American Union			. 474
Franco-German War			. 382
Russo-Turkish War .			. 211
Ironclad ships			. 115
Emancipation of Russian	serf	8.	. 85
Roads and bridges .			. 720
Sundries			. 632
Total			S,691





•

•

## DEBTS OF NATIONS.

## B.—Ratio of Debt per Inhabitant, in $\pounds$ .

		İ	1820.	1848.	1870.	1882.
United Kingdom	•		41	28	26	22
France	_		4	5	13	24
Germany	-	. i l	2	2	-4	5
Russia	·		1	11	. 4	7
Austria	•		4	4	10	12
Italy	•		11		16	18
Spain	•		4	8	19	24
Portugal	•	.	8	2 8 5	15	22
Holland	•	• 1	18	38	22	20
Belgium	•	•		l ŭ	6	12
Denmark	•	•	3	8	Ř	
Sweden and Norv	FuV	•			Ĭ	5 3
Greece	• •• •	•	•••	10	11	10
Turkey	•	• !			6	25
	•	•		6	10	
Europe	•	•	7 3	0		13
United States .	•	•	3	2 3	13	6
Spanish America	•	•	•••	3	. 6	10
Canada	•	•	•••		5	9
Australia	•	•	•••		19.	84
South Africa .		•	•••		2	14
Egypt The World .			•••		8	21
The World .			4	4	9	9

## C.—Debt compared with Wealth (1882).

				Millio	ns £.	Ratio of
				Wealth.	Debt.	Debt.
United Kingdon	11 .			8,720	763	8.75
France				8,060	911	11.30
Germany				6,320	229	3.63
Russia				4,340	553	12.70
Austria			•	3,610	419	11.64
Italy	-			2,350	522	22.22
Spain				1,590	390	24.58
Portugal				370	94	25.40
Holland				990	80	8.08
Belgium	-	-		810	62	7.67
Denmark	·			360	10	2.80
Sweden and Nor	-wav	-		980	20	2.04
Greece			•	210	18	8.60
Europe				38,710	4,071	10.52
United States .				9,490	333	3.49
Canada				650	40	6.15
Australia	•			590	97	16.50
Total .		_	_	49,440	4.541	9.18

For Wealth, see Capital.

## 136

#### DEBTS OF NATIONS.

## D.—Interest compared with Income.

				Millie	ons &.	Burthen
				Income.	Interest.	of Interest.
United Kingdom	•	•		1,247	28.7	2.30
France				965	31.8	3.29
Germany				850	9-2	1.08
Russia				848	24.1	2.85
Austria				602	18-9	3.15
Italy				845	19-6	5.73
Spain				218	12.4	5-60
Portugal				61	2.8	4.60
Holland				104	2.2	2.12
Belgium				120	2.9	2.42
Denmark				47	0.4	0.85
Sweden and Norwa	LV.			104	0.6	0.57
Greece	•	•		23	0.8	8.50
Europe	•			5,584	154.4	2.80
United States .				1,420	12.2	0.86
Canada		·		118	1.8	1.53
Australia	•	•		133	47	3.2
Total .			.	7,205	173·1	2.40

## E.—BRITISH NATIONAL DEBT.

			Mil	LIONS.	PER IN	ABITANT.	
Ye	ar.		Debt.	Interest.	Debt, &	Interest, Shillings.	
1702 .			13	1.3	2	4	
1748 .		. 1	78	8.1	13	10	
1763 .		. 1	147	4.8	21	14	
1783 .		.	257	9.7	32	24	
1797 .		.	413	170	41	34	
1817 .		.	841	82.0	42	32	
1837 .		.	788	29.1	32	23	
1860 .		.	826	28.7	29	20	
1870 .			801	27.0	26	18	
1882 .		.	763	28.7	21	16	

882	•	•	.	1	763		28.7		21	16
	Gr	oss d	ebt ir	M	arch	1882	•		£762,832,0	00 63
	De	duct	loans	rec	over	able			29,900,0	00
	,	**	Suez	Car	al S	hares	•		8,976,0	00
	1	Net a	mou	at of	deb	t.	•		£728,956,0	00
						I	Debt.		Ir	terest.
Con	sols				•	£709,	078,5	30	£21,	294,577
Ter	m.	Annı	ities.			87,	547,7	00	7.	107,572
Uni	fund	led	•			22,	077,5	00	- •	294,702
7.	farc	h 18	81			£768	708 7	30	£98	898 951

## F.—Wealth and Debt (Great Britain).

	_	1	Milli	ows L.	1
Year			Wealth.	Debt.	Ratio of Debt.
1702 .		 i	490	18	2:66
1763 .			1,100	147	13-36
1797 .			1,800	413	22-94
1817 .		.	2,400	841	35-04
1887 .	•	.	8,900	788	20-21
1860 .			5,560	826	14.88
1870 .		. 1	7,080	801	11.81
1882 .		. 1	8,720	763	8.75

## G.—Income and Interest (Great Britain).

					Mili	Burthen of	
		rear.	er.		Income.	Int. on Debt.	Interest.
1702 .			•		55	1.3	2:35
1763 .		•	•		122	4.8	3.92
1797 .				. 1	230	17.0	7:39
1817 .				. !	265	32-0	12.10
1837 .		•	•	. 1	420	29.1	6.94
1860 .					760	28.7	3.78
1870 .				.	955	27.0	2 83
1882 .				. 1	1.247	28.7	2.30

## See Capital.

## H.—DEBT OF FRANCE.



Ī		_			Date	et, Million	e.	Wealth,	Ratio of
ļ		16	er.		Funded.	Floating.	Total.	Millions &.	Debt.
1	1830		•		142	10	152	2,130	7:13
ł	1848				207	22	229	8,024	7.60
İ	1852				221	27	248	8,810	7.44
Ĺ	1869				468	86	504	5,240	9.60
İ	1882	•	•	•	831	81	912	8,060	11.30

## DEBTS OF NATIONS.

I.—Debt of Russia.

_			Mili	LIONS &.	
Ye	er,	Foreign.	Internal.	Paper-Money.	Total
1842.		 6	23	8	87
1852.		12	61	22	95
1862.		41	99	61	202
1872.		105	133	74	312
1882.		189	273	91	553

#### K.—Local Debt of Great Britain (1880).

London . 9 large towns Rural, &c.		:	Millions &. 20°6 43°3 73°0	Sanitary Docks Sundry	•	•		fillions & 56:7 23:2 57:0
Scotland .	•		16.3	Scotch			•	16.3
			153.2					153-2

#### L. - DEBTS OF CITIES.

City.	Debt (Millions £).	Per Inhabitant.	Valuation (Millions £).	Debt to Valuation.
London	20.6	£5 7 0	689	. 3.0
Paris	85.3	34 5 0	320	26.7
Berlin	5.6	5 8 0	164	3.2
Liverpool	21.6	39 12 0	66	32-5
Manchester .	6.2	10 18 0	62	10-0
Birmingham .	6.1	15 0 0	28	21.8
Leeds	8.5	11 7 0	22	15.8
Rome	i 2·3	7 16 0	14	16-0
Buda-Pesth .	1.3	4 5 0	44	2-9
Bradford	3.4	19 0 0	18	18-9
Breslau	1.3	5 6 0		
Bristol	0.6	2 18 0	16	3.8
Munich	1.5	6 0 0	1 15	10.0
Newcastle	0.7	4 17 0	14	5.0
New York	23.1	19 1 0	222	10.4
Philadelphia .	8.4	4 1 0	119	2-9
Brooklyn	7.9	14 17 0	45	17.6
St. Louis	4.8	13 11 0	32	15-0

Besides the above, the following cities in 1881 owed millions sterling as follows:—Boston 6, Baltimore 6, Washington 5, Cincinnati 5, Chicago 3, Pittsburg 3, Providence 2, San Francisco 1.

138

## DEBTS OF NATIONS.

## M.—Local Debts in United States (1881).

		Thousands.		Ratio	Ratio to
	State.	City.	Total.	per Inhab.	Wealth per Cen
Maine	£1,720	£1,610	£3,330	£5	3.6
N. Hampshire .	690	620	1,310	4	17
Vermont		120	120		0.2
Rhode Island .	520	2,190	2,710	10	2.6
Connecticut	1,030	2,080	3,110	5	2.1
Massachusetts .	6,780	13,110	19,890	11	4.0
New England	£10,740	£19,730	£30,470	8	3.1
New York	1,870	38,160	40,030	8	2.3
New Jersey	390	7,920	8,310	8	4.4
Pennsylvania .	4.660	8,310	12,970	8	1.1
Delaware	150	280	430	3	2.1
Maryland	2,330	5,780	8,110	9	5.1
Dist. Columbia .	100	4,730	4,730	24	10.5
Middle	£9,400	£65,180	£74,580	6	2.3
Virginia (2)	6,400	2,080	8,480	4	6.5
North Carolina .	5,600	140	5,740	4	7.6
South Carolina .	1,350	1.040	2,390	2	5.9
(leorgia	2,080	1,770	3,850	2	52
Florida	270	60	330	1	3.7
Alabama	2,400	710	3,110	3	5.5
Mississippi	640	80	720	1	1.7
Louisiana	3,380	1	3,380	4	5.5
Texas	1,050	730	1,780	1	1.7
Arkansas	1,040	70	1,110	1	3.2
Kentucky	100	1,460	1,560	î	1.2
Tennessee	5,600	410	6,010	4	5.1
South	£29,910	£8,550	£38,460	21	4.6
Ohio	1,080	7,020	8,100	3	1.2
Illinois		3,760	3,760	1	0.6
Missouri	3,430	5,520	8,950	4	3.2
Indiana	1.010	1,040	2,050	1	0.7
Iowa	50	420	470	144	0.2
Michigan	180	810	990	1	0.3
Wisconsin	470	790	1,260	1	0.6
Minnesota	530	610	1,140	1	0.9
Kansas	240	380	620	1 i	0.8
Nebraska	90	90	180	1	0.5
Colorado	30	10	40		0.3
West	£7,110	£20,450	£27,560	11/2	0.9
California	660	1,040	1,700	2	0.6
Oregon	110	20	130	1	0.7
Nevada	110	20	130	2	1.6
Pacific	£880	£1,080	£1,960	2	0.7
The Union	£58,040	£114,990	£173,030	31	1.8

#### DIAMONDS.

#### A.—Weight in Carats of Six Largest.

Kohinoor			103	Austrian Kaiser .	•		139
Star of Brazil .	•			Russian Czar .	•		193
Regent of France	•	•	136	Rajah of Borneo.	•	•	367

The value of the above is not regulated by size, nor easy to estimate, but none of them is worth less than £100,000.

#### B.—Scale of Value for Small Stones.

1	carat				•	£8	5 carat 10 ,,		•		£200
8	99	•	•	•		<b>72</b>	10 "	•	•	•	800

Cape diamonds are of inferior value; one of the largest, the Stewart, found in November 1872, sold for £11.000, weighing 288 carats, uncut. The Kimberley field, covering 9 acres, has produced diamonds to the value of 15 millions sterling since 1871, the diggings being from 100 to 170 feet deep. The annual export of diamonds from the Cape is about 1400 lbs., worth over 4 millions, and the fields employ 2000 white and 22,000 coloured diggers.

DIAMOND-DRILL.—This method of boring is found to cost about 7 shillings a foot in England. The following table shows the average wages and time employed in diamond-drill boring in the Barrow ironstone district:—

Depth, Yards,	Diameter, Inches.	Wages Paid.	Days, Working.	Cost per Foot, Pence.
48	6 to 2	£26	48	44
50	n	25	45	40
63	"	30	54	88
76	"	23	42	24
88	 n	36	66	32
124	"	59	108	38
126	"	50	90	32

See Tunnels.

#### DIET.

#### A .- WELKLY RATIONS IN LBS.

			Rations, Lbs.	Nitrogenous, Lbs.	Carbon, Lbs.
British soldiers .			25.7	2.46	4.84
Do. in India	Ċ		20.0	2.33	4.52
French soldiers		-	28.6	2-26	5.81
German " .			28.8	1.56	5-25
Dutch			25.0	1.67	4.82
Chelsea Hospital			22.6	1.99	5.31
English convicts			22.2	1.88	4-99
Farm-labourer .			22.1	1.82	5.11
Workhouse, aged			17.8	1.50	8-96
Chelsea boys		·	16.7	0.88	3-93

## B.—DESCRIPTION OF RATIONS.

	Weight in Lbs. Weekly.								
	Breed.	Cooked Mest.	Vegetables.	Sugar.	Sundries.				
Soldier	7·0 8·8	8.5	7.0	07	7.5				
Seaman	8.8	5.2	8.5	0.9					
Convict	10-0	2.6	7-6	0.2	1.8				
Pauper	7-0	8-0	6-0	0.4	0.8				
Female pauper .	6-0	2.0	4-0	0.8	0.6				
Lunatio	54	2-0	5.4	0.2	1-0				
Hospitals	6-0	8-0	8.5	0.5	2.0				

## C.—RELATIVE VALUE OF FOOD (BEEF PAR).

Oysters .			22	Turbot.			84	Beef .			100
Milk .			24	Mutton			87	Duck .			104
				Venison							
				Veal .							
Cod-fish	•	•	68	Fowl .	•		94	Butter.	•	•	124
Roos .	_		72	Herring		_	100	Cheese		_	155

## D.—Frankland's Table of Food required to Lift a Male Adult (10 Stone) 10,000 Feet.

			Lba.	Cost, Pence.			Lbs.	Cost, Pence.
Milk .			8-02	15	Bread		2.35	5 .
Apples .			7.82	12	Rice		1.84	5
Fish			6.37	25	Flour		1.31	4
Potatoes			5.07	4	Arrowroot		1-29	15
Beef .			3.58	86	Oatmeal .		1.28	3
Ham .	•		3.00	<b>8</b> 8	Cheese .		1.12	12

## E-FOOT-TONS OF ENERGY PER OUNCE OF FOOD.

		Poot-					Foot- tons.			Foot- tons.
Cabbage		16	Beef				55	Rice		145
								Flour .		
Milk .		24	Ham				65	Arrowroot		151
Ale		80	Bread	l			83	Oatmeal		152
<b>Potatoes</b>		88	Egg (	yo.	lk)		127	Cheese .		168
Porter .		42	Sugar	•	•		130	Butter .		281



142

#### DIET.

## F.—Components of Animal Food.

		Fat.	Nitrogen.	Water.	Various.	Total
Lobster		1.2	19.2	76.6	3.0	100
Oyster .		1.2	140	80 4	4.1	11
Turbot .		2.9	18·1	78-0	1.0	99
Rabbit .		8.2	18-9	73-2	9.7	**
Salmon .		5.5	16.1	77-0	1.4	"
Milk .		7.9	4.5	87-0	0.6	"
Eggs .	•	10.5	14.0	74.0	1.2	,,
Veal		15.8	16.5	68.0	4.7	91
Tripe .		16.4	13-2	68-0	2.4	). 10
Beef		17:1	17-2	61.5	4-2	"
Mutton .		18.1	15.3	62.5	4.1	**
Cheese .		41.3	7:0	38.8	12.9	"
Pork .		44-9	9.8	43.0	2.3	,,
Bacon .		68.3	8.8	25.0	2-9	"
Butter .		81.0	50	11.0	8-0	"

# G.—COMPONENTS OF VEGETABLE FOOD.

		Btarch.	Nitrogen.	Wat T.	Various,	Total.
Mushroom		3 5	4.7	<b>9</b> 1·0	0∙8	100
Cabbage .		4.0	1.8	920	2.2	22
Turnip		5.1	1.2	91.0	2.7	,,
Carrot		5.5	0.7	87:3	6.5	"
Beer		9.2	0.9	89.7	0-2	"
Paranip .		9.6	1.1	82.0	7:3	"
Beet-root .		11.3	5.0	82.7	1.0	"
Asparagus		11.8	1.2	86.0	1.0	"
Artichoke .		14.7	3·1	76-0	7-2	"
Yam		160	2.0	74.0	8-0	,,
Truffles .		16.6	8.8	72.0	2.6	"
Sugar-cane		18.0	5.5	72.0	4.5	"
Banana .		19.7	4.8	73.9	1.6	"
Potato		20.2	2.3	75.9	16	,,
Bread		49.0	10.0	88.6	7.4	"
Beans		52.6	22.0	12.8	12-6	"
Peas		52.6	22.3	14.5	10.6	"
Tes		55.2	28.8	12.0	4.0	"
Lentils		56.0	25-2	11.5	7.3	,,
Millet		59.0	9.3	12-2	19.5	"
Coffee		59.4	26-2	12-0	2.4	"
Wheat-flour		59.7	12.6	14.5	13.2	"
Oatmeal .		63.8	12.6	150	8.6	,,
Cocoa		71.0	24.0	.4-0	1.0	"
Maize		71.2	9-9	13.5	5.4	,,
Rye		73.2	8.0	15.0	<b>3</b> ·8	"
Barley	ĺ	74.3	6.3	15.0	4.4	,,
Rice		79.5	6.3	13.0	1.2	,, ,,
Buckwheat		79.9	2.6	12.8	4.7	"

## II.—DIET OF EUROPEAN ARMIES.

			Ounces Daily.									
		Nitrogen.	Fat.	Carbon,	Salt.	Total.	Foot-tous.					
British .	_	4.1	1.6	17:4	0.8	23.4	8.552					
French.		4.8	1.8	18-0	1.0	24.6	3,719					
German		4.0	1.1	19.6	1.2	26-2	3,834					
Austrian		8-7	1.6	17-0	10	28.4	8.590					
Standard		4-6	8.0	14.8	1.1	28-0	3.888					

## I.—FIELD RATIONS.

	Ounces Daily,								
	Beef.	Bread.	Rice.	Coffee.	Sugar.	Total.			
British (Crimes)	16	24	2	1	2	443			
Do (India)	16	16	4	11	2	441 391			
French	7	26	8	l i	1	37			
German	8	28	8	Į į	1	40			
Russian	16	16				40 <u>1</u> 82 82			
Austrian	5	26	1	l		82			
American	20	18	2	2	2	44			

## K.—British NAVY RATIONS.

	Ounces	C	ta.	Energy,	
	Daily.	Nitrogen.	Fat.	Carbon.	Foot-tons
Biscuit,	20	20	0.2	8.4	1,720
Meat	14	1.8	3.0	5.4	1,310
Peas, flour, &c	7	1.0		3.0	560
Sugar	2	!	•••	0.8	240
Cocoa	1	0.2	•••	0.7	125
Total	. 44	5.0	3.2	18:3	3,955

## L.—Percentage of Carbon in Food.

Cabbage		•		3	Eggs .				16	Biscuit .	•		42
Beer	•	•	•	- 4	reer .	•	•	•	2/	Oatmeal	٠	•	42
Carrots .				5	Bread .				27	Sugar .			42
Mük				7	Cheese.				36	Flour .			46
Paranipa .				8	Peas .	•			36	Bacon .			54
Fish				9	Rice .				38	Cocua .			69
Potatoes				12	Maize .				38	Cocoa . Butter .			79

See Food

DIET.

#### M.—BRITISH PRISON RATIONS.

	Ounce	Baily.	Energy, Foot-tons.			
	Hard Labour,	Light Labour.	Hard Labour.	Light Labour.		
Bread	24	21	1,992	1,743		
Meat	4.5	8.2	840	270		
Milk	2	2	48	48		
Molasses	1	li	100	100		
Oatmeal	2	2	804	804		
Cheese	0.6	0.6	98	98		
Flour	1.3	07	192	104		
Salt	0.5	0.5	60	60		
Cocoa	0.5	0.5	62	62		
Vegetables	10	10	10	10		
Potatoes	14	14	530	530		
Total	51.4	46.8	8,786	3,329		

#### N.—Average Food per Head.

	Man	aged 20-	60, Ounces Da	ily.	O. E.
	Bread.	Meat.	Butter and Cheese.	Sugar.	Foot-tons
United Kingdom .	21	7	2	5	3,372
France	33	5	1 1	14	3,353
Germany	38	5	1 1	14	3,870
Russia	32	31	1	4	3,015
Austria	28	5	2	1	3,034
Italy	28	2	1 1	+	2,691
Spain	26	3	1 4.51	1	2,495
Low Countries	30	4	1	11	3,225
Denmark	31	41	14	21	3,558
Sweden & Norway.	22	3	1 1	1	2,456
United States	26	9	11	14	3,462
Average	30	5	1	14	3,320

The above does not include fish, eggs, potatoes, fruit, vegetables, chestnuts, rice, and other articles of much importance. The aggregate food for a man doing physical or mental work should be equal to at least 3300 foot-tons daily, for a woman 2200, and for a child 1100 foot-tons.

#### DIGESTION.

## A .- RATIO OF NITROGEN DIGESTED. .

			Per Cont.	l			Per Cent.				Per Cent.
Lentils .											
Potatoes			68	Bread .		•	81	Eggs			98
Peas	•	•	72	Cheese.	•	•	96				

### B.—Time Required for Digestion.

	Hours.	Min.	İ		Hours.	Min.
Rice	1	0	Mutton boiled		3	0
Eggs raw .	1	30	Beef roast .		3	0
Apples	1	30	Bread fresh .		3	15
Trout boiled .	1	80	Carrots boiled	٠.	3	15
Venison broiled	1	85	Turnips ".		3	30
Sago boiled .	1	45	Potatoes ,,		3	30
Milk ".	2	0	Butter		3	30
Bread stale .	2	0	Cheese		3	30
Milk raw .	2	15	Oysters stewed		3	30
Turkey boiled	2	25	Eggs hard .		3	30
Goose roast .	2	80	Pork boiled .		3	30
Lamb broiled	2	30	Fowl roast .		4	0
Potatoes baked	2	30	Beef fried .		4	0
Beans boiled.	2	30	Cabbage .		4	30
Parsnips , .	2	30	Wild fowl .		4	30
Oysters raw .	2	55	Pork roast .		5	15
Eggs boiled .	3	0	Veal roast .	•	5	30

#### DISEASE.

## A.—Causes of Death, England (1879).

Cause.				Male.	Female.	Total.
Zymotic				40,767	40,507	81.274
Constitutiona	1	•		43,887	44,949	88,836
Local .				135,202	124,454	259,656
Various .				38,774	40,080	78,854
Violent .	•	•	•	12,866	4,769	17,635
Total				271,496	254,759	526,255

## B.—Deaths over 15 Years of Age.

		Male.	Female.	Total.
		8,116	8,731	16,847
		31,304	<b>3</b> 3,989	65,293
		84,296	83,863	168,159
•		24,916	23,708	48,624
•		148,632	150,291	298,923
	•		8,116 31,304 84,296 24,916	. 8,116 8,731 . 31,304 33,989 . 84,296 83,863 . 24,916 23,708



## 146

## DISEASE.

## C.—Decrease of Zymotic Mortality.

_	•							
Period.						Anı	nual Average,	Per Cent. of Deaths.
1888-40		•		•		•	61,807	177
1848-50		•		•			88,924	<b>22</b> ·1
1858-60		•		•	•	. •	79,930	17-6
1867-68			•	•		•	87,114	18-2
1879		•	•	•		•	81,274	15· <b>5</b>

## D.—Alphabetical List of Diseases, England (1879).

					Number (	DBATES.	_
					Male,	Female.	Total.
Apoplexy			•	<u> </u>	6,904	7,801	14,205
Asthma					1,298	950	2,248
Brain .					1,768	1,424	8,192
Bright's dis	98.89				2,845	2,217	5,062
Bronchitis					35,595	85,824	71,419
Cancer					4,121	8,508	12,629
Childbirth					!	1,876	1,876
Convulsions					18,639	10,214	23,858
Croup .					1,932	1,642	8,574
Debility					12,986	11,766	24,752
Diarrhœa					5.712	5.236	10,948
Diphtheria					1,340	1,530	2,870
Drink .					614	814	928
Dropsy					942	1,415	2,357
Dysentery					291	224	515
Epilepsy					1,555	1,421	2,976
Erysipelas					990	884	1,824
Gout .					515	167	682
Heart .					15,184	16,957	32,091
Hydrocepha	lus				4.742	3,416	8,158
Hydrophobi	a				29	6	35
Jaundice					822	740	1,566
Liver .			•		2,026	2,079	4,105
Measles					4,678	4,507	9,185
Old age					13,072	16,453	29,525
Paralysis					6,339	6,254	12,593
Phthisis					25,051	24,162	49,213
Pneumonia					15,721	11,453	27,174
Rheumatism					1,032	1,027	2,059
Scarlatina					9,148	8,465	17,613
Scrofula	•				1,543	1,392	2,935
Smallpox			•		283	253	536
Syphilis					1,053	976	2,029
Teething					2,392	1,864	4,256
Typhoid					2,920	2,940	5,860
Typhus			•		304	229	588
Whooping-c	ough	-			5,804	6,948	12,752

#### E.—Diseases and Ratio in Deaths.

		Deaths, ousands.	Ratio.			Deaths,	Ratio.
Bronchitis		71.4	13.6	Convulsions		23.9	4.5
Phthisis .		51.3	9.8	Scarlatina			3.3
Heart		86.1		Apoplexy.			2.7
Old age .		29.5		Cancer .			2.4
Pneumonia				Paralysis .			2.4
Debility .				Various .			88.9
See Phi	r:					-	

## F.—SICKNESS IN IRELAND (CENSUS).

			Bick, per 10,0	00 Inhabitan	te.
Diseases.		1851.	1861.	1871.	Medium.
Zymotic .		53	17	9	26
Brain .		87	50	58	48
Respiratory		16	16	17	16
Various .	•	53	48	48	59
Total .		159	131	132	140

## G.—Causes of Death, per Million Inhabitants.

	E	ngland, Y	early Rati	0.	Scotland.	Ireland.
	1850-59.	1860-69.	1870-79.	1879.	1877.	1880.
Apoplexy	451	483	540	566	507	189
Asthma	248	186	132	114	96	63
Brain disease .	202	253	267	288	315	208
Bronchitis	1,185	1,749	2,295	2,847	2,525	2,164
Cancer	315	387	470	511	451	841
Childbirth	114	112	98	75	108	105
Consumption .	2,730	2,547	2,205	2,044	2,294	2,135
Diarrhœa	853	871	895	435	421	456
Dropsy	501	348	187	130	116	184
Heart disease .	703	975	1,242	1,439	1,299	781
Hydrocephalus .	410	858	321	325	546	223
Liver disease .	213	252	280	275	224	182
Measles	409	465	369	366	281	197
Paralysis	452	499	515	508	560	267
Pneumonia	1,265	1,135	1,025	1,083	865	434
Scarlatina	996	890	805	701	879	470
Scrofula	149	148	125	133	203	187
Smallpox	240	169	258	21	11	75
Typhus	945	890	410	257	466	388
Violent deaths.	744	784	750	703	799	379
Whooping-cough	512	529	517	507	432	455

#### H.—CAUSES OF DEATH IN LONDON.

	] 1	Per Million Inhabitants.						
	1859.	1869.	1879.	Medium.	England (1870-79).			
Bronchitis	2,310	2,995	8,622	2,977	2,295			
Childbirth	93	79	48	73	98			
Consumption	2,850	2,756	2,476	2,692	2,205			
Diarrhoea	1,210	1.061	495	923	895			
Fever	657	558	249	488	410			
Measles	488	455	670	537	869			
Scarlatina	1,280	1.825	719	1.273	805			
Smallpox	425	86	122	211	258			
Violent deaths	752	747	774	760	750			
Whooping-cough .	639	1.178	792	870	517			

## I.-1) ISEASES IN UNITED STATES (1880).

Cause of Death.			Number.	Per Million Inhabitants.	Ratio.
Whooping-cough .			11,202	224	1.5
Scarlet fever			16,416	828	2·1
Typhoid ,,			22,905	458	3.1
Digestive diseases.			84,094	682	4.5
Diphtheria			38,398	768	5 1
Diarrhœa			65,565	1.311	8.7
Nervous diseases .			83,670	1,674	11 i
Consumption .			91.551	1.831	12.2
Respiratory affections			107,904	2,158	14.4
Various	•	•	285,188	5,704	37·3
Total			756,893	15,138	100-0

It is supposed that 15 per cent. of all deaths escaped the notice of enumerators, and that the real death-rate in 1880 was 17.8 per 1000, instead of 15.1 as given above. Consumption carried off, as compared with England, thus:—

	United States.			England.	
Per 100 deaths . Per 10,000 inhabitants		Malen, 101 18	Females. 14 23	Malos. 9 19	Females.

DISPENSARIES.—Medical relief was given gratis to 972,000 persons in England and Wales in 1879. The sum spent on dispensaries in Ireland is £150,000 per annum. In France 230,000 persons annually receive medicine gratis at a cost of £58,000.

## DISTANCES.

## DISTANCES.

## A.—OCEAN ROUTES.

Mauritius	A.—OURAN ROUTES.						
Alexandria—Southampton 2,960 Amoor River—S. Francisco 3,946 Accension—Cape Horn 3,800 Bahia—Southampton 4,866 Batavia—Sydney . 3,870 Behring's Sts.—S. Francisco 2,720 Bermuda—Southampton 2,973 Bombay—Mauritius . 2,503	NAUTICAL MILES, 6 = 7 ENGLISH.						
Alexandria—Southampton 2,960 Amoor River—S. Francisco 3,946 Accension—Cape Horn 3,800 Bahia—Southampton 4,866 Batavia—Sydney . 3,870 Behring's Sts.—S. Francisco 2,720 Bermuda—Southampton 2,973 Bombay—Mauritius . 2,503	Aden-Mauritius	2,822	London-Madras 7.330				
Amoor River—S. Francisco Accension—Cape Horn 3,800 Anckland—Panama 6,490 Azores—Portsmouth 1,390 Bahia—Southampton 8,3870 Behring's Sts.—S. Francisco Bermuda—Southampton 2,2720 Bermuda—Southampton 2,2720 Bermuda—Southampton 2,2731 Bombay—Cape of G. Hope 4,527 Bombay—Mauritius 2,503 Melbourne 5,530 Melbourne 5,530 Melbourne 5,230 Melbourne 5,330 Melbourne 5,330 Melbourne 5,330 Melbourne 5,330 Mel	Alexandria-Southampton	2,960	. Singapore 8,345				
Auckland—Panama 6,490 Auckland—Panama 6,490 Bahia—Southampton 4,366 Batavia—Sydney 3,870 Behring sts.—S. Francisco Bermuda—Southampton 2,973 Bombay—Cape of G. Hope Bombay—Mauritius 2,503  "Melbourne 5,530 "Liondon 6,330 Boston—Galway 2,385 Calcutta—London 7,950 "Melbourne 5,230 "Melbourne 5,230 "Melbourne 5,230 "Melbourne 5,230 "Melbourne 5,230 "Melbourne 5,381 "Melbourne 5,381 "Melbourne 5,381 "Melbourne 5,381 "Melbourne 5,381 "Melbourne 5,381 "Melbourne 5,381 "Melbourne 5,381 "Melbourne 5,381 "Melbourne 5,381 "Melbourne 1,190 "Melbourne 5,381 "Melbourne 1,380 "Melbourne 1,380 "Melbourne 1,360 "Melbourne 1,360 "Melbourne 1,360 "Mauritius—Aden 2,382 "Melbourne 4,570 Melbourne—Calcutta 5,230 "Mauritius—Aden 1,350 "Melbourne 4,570 Melbourne—Calcutta 5,230 "Mauritius—Aden 2,382 "Melbourne—Calcutta 5,230 "Melbourne—Calcutta 5,230 "Melbourne—Calcutta 5,230 "Melbourne—Tenlemuth 5,886 New York—Galway 2,2385 "Liverpool 2,980 "Portsmouth 4,020 "Madras—London 7,300 "Melbourne—Calcutta 5,230 "Melbourne—Calcutta 5,230 "Melbourne—Calcutta 5,230 "Melbourne—Calcutta 5,230 "Melbourne—Calcutta 5,230 "Melbourne—Calcutta 5,230 "Melbourne—Calcutta 5,230 "Melbourne—Calcutta 5,230 "Melbourne—Calcutta 5,230 "Melbourne—Calcutta 5,230 "Melbourne—Calcutta 5,230 "Melbourne—Tenlemuth 5,886 New York—Galway 2,231 "Civerpool 2,980 "Portsmouth—Azores 1,390 "Melbourne—Tenlemuth—Tenlemuth—Azores 1,390 "Melbourne—Tenlemuth—S,886 New York—Galway 2,231 "Civerpool 2,980 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Melbourne—Teneriffe 2,450 "Tiverpool—Teneriffe 2,450 "Tiverpool—Teneriffe 3,450 "Tiverpool—Teneriffe 2,450 "Tiverpool—Teneriffe 2,450 "Tiverpool—Teneriffe 2		8.946					
Auckland—Panama			Madras-London 7.330				
Ratores		6.490					
Bahia							
Bahring's Sts.—S. Francisco 2,720   Bernsuda—Southampton 2,973   Bombay—Cape of G. Hope	Bahia-Southampton						
Behring	Batavia-Sydney	8.870	Melbourne-Calcutta . 5,230				
Bernuda			T : 1 71 ECE				
Bombay			Manufelma 4 570				
Bombay		4.527	Montevideo - Falmouth . 5.886				
Melbourne							
London	Malli amon a		0,100				
Roston—Galway	" T J		17 1 100				
Calcutta—London . 7,950     , Melbourne . 5,230     , Sues 4,580 Cape of G. Hope—Calcutts 5,381     , Bombay 4,527     , Java 5,025     , Liverpool 5,998 Cape Horn—Ascension . 3,800     , Liverpool 7,325     , Sydney . 5,470 Demerara—London . 4,030 Fernando Po—Plymouth . 4,130 Galway—Boston . 2,385 Gibraltar—Southampton . 1,160 Glas yow—New York . 3,400 Halitax—Galway . 2,165 Havanna—New York . 1,190     , Portsmouth . 4,029 Hong Kong—Honolulu . 4,838 Honolulu—Callao . 5,145     ,, San Francisco 2,081     ,, Tahiti . 2,378     , Valparaiso . 5,902 Jamaica—Portsmouth . 4,050 Java—Cape of Good Hope 5,928     ,, Cape Horn . 7,325     ,, Melbourne . 11,555     ,, New York . 2,980     ,, Portland . 2,770     ,, Quebec . 2,634 Lisbon—Madeira . 535 London—Bombay . 6,330     ,, Calcutta . 7,950     ,, Tahiti . 4,233 London—Bombay . 6,330     ,, Calcutta . 7,950     ,, Tahiti . 4,233 London—Bombay . 6,330     ,, Calcutta . 7,950     ,, Tahiti . 4,233 London—Bombay . 6,330     ,, Calcutta . 7,950     ,, Tahiti . 4,233 London—Bombay . 6,330     ,, Calcutta . 7,950     ,, Tahiti . 4,233 London—Bombay . 6,330     ,, Calcutta . 7,950     ,, Tahiti . 4,233 London—Bombay . 6,330     ,, Calcutta . 7,950     ,, Tahiti . 4,233 London—Bombay . 6,330     ,, Calcutta . 7,950     ,, Tahiti . 4,233 London—Bombay . 6,330     ,, Calcutta . 7,950     ,, Tahiti . 4,233			7 Timemed 0.000				
Melbourne			70 4 4 6 6 6 7				
Remain   R	37-11		Gamthammton 9.000				
Cape of G. Hope—Calcutta 5,381 , Bombay 4,527 , Java 5,025	0						
New York   1,190   St. Vincent — Pernambuco   1,608   St. Vincent — Pernambuco   1,608   St. Vincent — Pernambuco   1,608   St. Vincent — Pernambuco   1,608   St. Vincent — Pernambuco   1,608   St. Vincent — Pernambuco   1,608   St. Vincent — Pernambuco   1,608   St. Vincent — Pernambuco   1,608   St. Vincent — Pernambuco   1,608   St. Vincent — Pernambuco   1,608   St. Vincent — Pernambuco   1,608   St. Vincent — Pernambuco   1,608   St. Vincent — Pernambuco   1,608   St. Vincent — Pernambuco   1,608   Teneriffe   850   Teneriffe   850   Teneriff	Cape of G. Hope-Calcutta						
Cape Horn—Ascension   3,800   ,	Dambas		37.1 . 1000				
Cape Horn—Ascension 3,800 , Liverpool 7,325 , Sydney 5,470 Demerara—London 4,030 Fernando Po—Plymouth 4,130 Galway—Boston 2,385 Gibraltar—Southampton 1,160 Glas yow—New York 3,400 Halifax—Galway 2,2165 Havanna—New York 1,190 St. Helena—Portsmouth 4,330 Halifax—Galway 2,2165 Havanna—New York 1,190 St. Thomas—Southampton 3,570 Havanna—New York 1,190 St. Thomas—Southampton 3,570 St. Vincent—Pernambuco 1,608 St. Thomas—Southampton 3,570 St. Vincent—Pernambuco 1,608 St. Thomas—Southampton 3,570 St. Wincent—Pernambuco 1,608 St. Thomas—Southampton 3,570 St. Helena—Portsmouth 4,330 St. Helena—Portsmouth 4,330 St. Helena—Portsmouth 2,608 St. Thomas—Southampton 3,570 St. Wincent—Pernambuco 1,608 Now York 2,980 N	Tomo		Portsmouth—Azores . 1.390				
Cape Horn—Ascension 3,800  , Liverpool 7,325 , Sydney 5,470 Demerara—London 4,030 Fernando Po—Plymouth 4,130 Galway—Boston 2,385 Gibraltar—Southampton 1,160 Glas gow—New York 3,400 Halitax—Galway 2,165 Havanna—New York 1,190 , Portsmouth 4,029 Hong Kong—Honolulu 4,838 Honolulu—Callao 5,145 , San Francisco 2,081 , Tahiti 2,378 , Valparaiso 5,902 Jamaica—Portsmouth 4,050 Java—Cape of Good Hope 5,025 Liverpool—Cape of G. Hope 5,988 , Cape Horn 7,325 , Melbourne 11,555 , New York 2,980 , Portland 2,770 , Quebec 2,634 Lisbon—Madeira 535 London—Bombay 6,330 , Calcutta 7,955  London—Bombay 6,330 , Calcutta 7,955  London—Bombay 6,330 , Calcutta 7,955  London—Bombay 6,330 , Calcutta 7,955  London—Bombay 6,330 , Calcutta 7,955  London—Bombay 6,330 , Calcutta 7,955  London—Bombay 6,330 , Calcutta 7,955 , Cape Horn 7,325 , Roew York 3,075 , St. Helena 4,330 , Tahiti 11,530  Guebec—Galway 2,392 Liverpool 2,634 Rio Janeiro—Southampton 5,060 St. Helena—Portsmouth 4,330 St. Thomas—Southampton 3,570 St. Vincent—Pernambuco 1,608 Teneriffe 850 San Francisco—Amoor 3,946 Shanghai—Sydney 4,640 Singapore—London 8,345 Suez—Calcutta 4,580 Sydney—Batavia 3,870  Shanghai—Sydney 4,640  Teneriffe—Pernambuco 2,450 Valparaiso—Honolulu 2,378 , Portsmouth 11,530 Teneriffe—Pernambuco 2,450 Valparaiso—Honolulu 5,902	T imamaal		17 4000				
Liverpool			Tamaian 4.050				
Sydney	T :		N7 371. 0 07.5				
Demerara—London			" OL TT-1 4 900				
Fernando Po—Plymouth			77°F'41 11 K90				
Galway—Boston . 2,385 Gibraltar—Southampton . 1,160 Glas yow—New York . 3,400 Halitax—Galway . 2,165 Havanna—New York . 1,190 , Portsmouth . 4,029 Hong Kong—Honolulu . 4,838 Honolulu—Callao . 5,145 ,, San Francisco 2,081 ,, Tahiti . 2,378 , Valparaiso . 5,902 Jamaica—Portsmouth . 4,050 Java—Cape of Good Hope 5,025 Liverpool—Cape of G. Hope 5,998 ,, Cape Horn . 7,325 ,, Melbourne . 11,555 ,, New York . 2,980 ,, Portland . 2,770 ,, Quebec . 2,634 Lisbon—Madeira . 535 London—Bombay . 6,330 , Calcutta . 7,950 , Tahiti . 4,233 London—Bombay . 6,330 , Calcutta . 7,950 , Tahiti . 4,233  Lisbon—Madeira . 7,950 , Cape Horn . 7,950 , Tahiti . 4,233 , Tiverpool . 2,634 Rio Janeiro—Southampton 5,060 St. Helena—Portsmouth . 4,330 Teneriffe . 855 San Francisco—Amoor . 3,946 ,, Behring's Sts. 2,720 ,, Panama . 3,150 Shanghai—Sydney 4,640 Singapore—London . 8,345 Sydney—Batavia . 3,870 ,, Shanghai . 4,640 , Valparaiso . 6,198 Teneriffe—Pernambuco . 2,450 Valparaiso—Honolulu . 5,902 ,, Tahiti . 4,233	Fernando Po-Plymouth						
Gibraltar—Southampton   1,160   Glas yow New York   3,400   Haliax—Galway   2,165   Havanna—New York   1,190   y., Portsmouth   4,029   Hong Kong—Honolulu   4,838   Honolulu—Callao   5,145   y., San Francisco   2,081   y., Tahiti   2,378   y. Valparaiso   5,902   Jamaica—Portsmouth   4,050   Java—Cape of Good Hope   5,025   Liverpool—Capeof G. Hope   5,998   y., Cape Horn   7,325   y., New York   2,980   y., Portland   2,770   y., Quebec   2,634   Lisbon—Madeira   535   London—Bombay   6,330   y., Calcutta   7,950   y., Cape Horn   5,902   y., Cape H	Galway-Boston						
Clas yow - New York   3,400   Halifax - Galway   2,165   Havanna - New York   1,190   1,008   Hong Kong - Honolulu   4,838   Honolulu - Callao   5,145   7, San Francisco   2,081   7, Tahiti   2,378   7, Valparaiso   5,902   Jamaica - Portsmouth   4,050   Java - Cape of Good Hope   5,025   Liverpool - Cape Good Hope   5,025   7, Melbourne   11,555   7, New York   2,980   7, Portland   2,770   7, Quebec   2,634   Lisbon - Madeira   535   London - Bombay   6,330   7, Cape Honolulu   2,381   Tahiti - Ho	Gibraltar-Southampton						
Halifax - Galway   2,165   Havanna - New York   1,190   Portsmouth   4,029   Hong Kong - Honolulu   4,838   Honolulu - Callao   5,145   ,, San Francisco   2,081   ,, Tahiti   2,378   , Valparaiso   5,902   Jamaica - Portsmouth   4,050   Java - Cape of Good Hope   5,025   Liverpool - Capeof G. Hope   5,025   ,, Melbourne   11,555   ,, New York   2,980   ,, Portland   2,770   ,, Quebec   2,634   Lisbon - Madeira   535   London - Bombay   6,330   , Calcutta   7,950	Glasrow-New York .						
Havanna							
Portsmouth			St. Vincent-Pernambuco 1.608				
Hong Kong—Honolulu							
Honolulu—Callao							
,, San Francisco 2,081 ,, Tahiti 2,378 , Valparaiso . 5,902  Jamaica—Portsmouth 4,050  Java—Cape of Good Hope 5,998 ,, Cape Horn . 7,325 ,, Melbourne . 11,555 ,, New York . 2,980 ,, Portland . 2,770 ,, Quebec 2,634  Lisbon—Madeira 535  London—Bombay . 6,330 , Calcutta . 7,950 , Calcutta . 7,950 , Tahiti . 4,233	Honolulu-Callao		D.1 C4. 0 700				
", Tahiti         2,378         ", Panama         3,150           Jamaica—Portsmouth         4,050         Singapore—London         8,345           Java—Cape of Good Hope         5,925         Suez—Calcutta         4,580           Liverpool—Capeof G. Hope         5,998         Sydney—Batavia         3,870           ", Cape Horn         7,325         ", Cape Horn         5,460           ", New York         2,980         ", Valparaiso         6,198           ", Portland         2,770         Tahiti—Honolulu         2,378           ", Portsmouth         11,555         Tenerifie—Pernambuco         2,450           Valparaiso—Honolulu         5,992         Valparaiso—Honolulu         5,992           ", Calcutta         7,950         Valparaiso—Honolulu         5,902           ", Calcutta         7,950         Valparaiso—Honolulu         6,108           ", Tahiti         4,233         4,640	0 12		1711 0.001				
Valparaiso   5,902   Shanghai—Sydney   4,640     Jamaica—Portsmouth   4,050     Java—Cape of Good Hope   5,925     Liverpool—Cape of G. Hope   5,925     Cape Horn   7,325     Melbourne   11,555     New York   2,980     Portland   2,770     Quebec   2,634     Lisbon—Madeira   555     Lindon—Bombay   6,330     Calcutta   7,950     Damage   4,920     Tahiti   Portsmouth   11,530     Teneriffe—Pernambuco   2,450     Valparaiso—Honolulu   5,902     Tahiti   4,233     Calcutta   7,950     Tahiti   4,233     Calcutta   7,950     Tahiti   4,233     Calcutta   7,950     Tahiti   4,233     Calcutta   7,950     Tahiti   4,233     Calcutta   7,950     Calcutta	TD. 1. 141						
Jamaica—Portsmouth         4,050         Singapore—London         8,345           Java—Cape of Good Hope         5,025         Suez—Calcutta         4,580           Liverpool—Cape of G. Hope         5,998         Cape Horn         7,325           , Melbourne         11,555         Cape Horn         5,470           , New York         2,980         Valparaiso         6,198           Tahiti—Honolulu         2,378         Tahiti—Honolulu         2,378           Lisbon—Madeira         535         Teneriffe—Pernambuco         2,450           Valparaiso—Honolulu         5,902         7           , Calcutta         7,950         7         7           , Cape Horn         5,470         7         7           , Portland         2,378         7         7           , Portsmouth         11,530         7         11,530           Lisbon—Barbay         6,330         6,330         7         7         7           , Cape Horn         5,470         5         7         7         7         7           , Portsmouth         11,530         7         7         7         7         7         7         7         7         7         7         7	Valnessies						
Java—Cape of Good Hope   5,025   Suez—Calcutta							
Liverpool—Capeof G. Hope 5,998 ,, Cape Horn 7,325 ,, Melbourne 11,555 ,, New York 2,980 ,, Portland 2,770 ,, Quebec 2,634 Lisbon—Madeira 535 London—Bombay 6,330 , Calcutta 7,950 , Tahiti 4,233 , Tahiti 4,233							
""">""" Cape Horn       7,325         """">""" Melbourne       11,555         """">""" Valparaiso       6,460         """>""" Valparaiso       6,190         """" Valparaiso       6,190         """" Valparaiso       11,530         Tahiti—Honolulu       2,450         Valparaiso—Honolulu       5,902         """>""" Tahiti       4,233         """>""" Tahiti       4,233         """>""" Tahiti       4,233							
,, New York       2,980         ,, Portland       2,770         ,, Quebec       2,634         Lisbon-Madeira       535         Lindon-Bombay       6,330         , Calcutta       7,950         , Demonstrate       4,020         , Tahiti       4,033         , Tahiti       4,233         , Tahiti       4,233	C 11	7,325					
", New York"         2,980         ", Valparaiso         6,198           ", Portland         2,770         Tahiti—Honolulu         2,378           ", Quebec         2,634         ", Portsmouth         11,530           Lisbon—Madeira         535         Teneriffe—Pernambuco         2,450           Valparaiso—Honolulu         5,902           ", Calcutta         7,950         ", Tahiti         4,233           ", Saldent         4,233         1,233	Wallanna 1	1,555	" Shanghai 4.640				
, Portland . 2,770 , Quebec . 2,634 Lisbon—Madeira . 535 London—Bombay . 6,330 , Calcutta . 7,950 , Tahiti—Honolulu 2,378 , Portsmouth . 11,530 Teneriffe—Pernambuco . 2,450 Valparaiso—Honolulu . 5,902 , Tahiti 4,233	, New York .						
Quebec	TD-malam J						
Lisbon—Madeira 535 Teneriffe—Pernambuco . 2,450 London—Bombay 6,330 Valparaiso—Honolulu 5,902	· · · · · · · · · · · · · · · · · · ·						
London—Bombay 6,330 Valparaiso—Honolulu 5,902  Calcutta 7,950 , Tahiti 4,233	Lisbon-Madeira						
", Calcutta 7,950 ", Tahiti 4,238	London-Bombay	6,330					
Thomas 4020 Sudan 6109	Ø-1		70 1 111 4 200				
	1)	4,030	QJ £ 100				

## B.—FROM LONDON, BIRD'S FLIGHT, ENGLISH MILES.

Algiers	1,050	Falklands .	8,150	Montreal 8,340
Amsterdam .	210	Florence	780	Moscow 1,580
Astrakan	2,180	Frankfort .	400	Naples 1,000
Azores	1,680	Geneva	460	Natal 5.850
Barcelona	680	Genoa	650	New Orleans . 4.820
Belgrade	1,040	Gibraltar	1,100	New York 3,620
Berlin	580	Halifax	2,940	Palermo . 1.150
Bordeaux	460	Hamburg .	450	Paris 200
Boston	3,190	Havanna	4,700	Pekin 5,400
Bremen	390	Hong-Kong .		Philadelphia . 3,700
Brussels	190	Honolulu	8,430	Quebec 3,200
Bucharest	1.270	Iceland	1,060	Quito 6,500
Buda-Pesth .	900	Jamaica	4,800	Rio Janeiro 6,000
Buenos Ayres.	7.260	Jersey	170	Rome 900
Cadiz	1,080	Jerusalem .	2,100	San Francisco 6,000
Cairo	2,160	Lima	6,900	St. Petersburg 1,380
Calcutta	4.870	Lisbon	980	Sierra Leone . 3,300
Canton	5,960	Madeira	1,600	Singapore . 7,050
Cape-town .	5.950	Madras	5,170	Stockholm 910
Chicago	4,050	Madrid	780	Sydney 10,120
Colombo	5,370	Malta.	1.260	Teneriffe . 2.080
Constantinople		Manilla	6,700	Utah 5.500
Copenhagen .	600	Marseilles .	620	Valparaiso . 7,850
Cyprus	1,980	Mauritius .	6.010	Vienna 760
Dresden	600	Melbourne .	9,990	Warsaw 910
Dublin	280	Mexico	5,800	Washington 3,800
Edinburgh .	300	Montevideo .		Yeddo 6.600
ramontal .	300	WOULFGAIGEO .	7,150	1 10000

## DIVORCES.

## A.—Divorces and Separations.

		Per Million	Inhabitanta.	Per 1000 1	Marringen
		1870.	1880.	1870.	1880.
England		8	15	1	2
Scotland		8	21	1	3
France .		i 33	71	4	9
Germany			130	•••	17
Russia .		11	13	14	2
Austria .		70	91	8	10
Italy		21	22	3	3
Belgium		22	52	3	7
Holland .		42	55	5	8
Switzerland			370		51
Denmark		170	202	25	30
Sweden .		35	47	5	7
Norway .		3	5		2
Roumania		55	82	7-	10
U. States (M	ass.) .	210	360	21	45

In France 38 per cent. of divorced couples had no children.

52 per cent. were married over 10 years.

In Switzerland for every 1000 marriages there were 13 divorces in Catholic cantons, 59 in Protestant, and 51 in mixed; general average, 50 per 1000.

In Austria the mixed provinces had 12 times more divorces to population, the Protestant 28 times more, than in Catholic

provinces.

In England 116 divorced persons were married in 1880; in Switzerland 775 the same year. The rate of suicide has risen in all countries in which divorces increased.

#### B.—DIVORCES IN BELGIUM.

## PER 1000 MARRIAGES (1878).

Antwer	р.	•	•	8-0	- 1	Brussels.	•	•	147
Ghent	•	•	•	3.2	- 1	Liège .			150

In Belgium the ratio of divorces per 1000 marriages is 5 times higher than in 1840, and 4 times than in 1850.

#### C.—MARRIAGE OF DIVORCED PERSONS.

#### PER 1000 MARRIAGES

			T 10	· 1	TWOMPAN	•	
					Men.	Women.	Total.
England					07	0.5	0.6
Holland					1.0	0.8	0-9
Hungary					1.2	1.0	1.1
Prussia					2-2	2.4	2.3
Denmark					3-2	<b>3-2</b>	3.3
Switzerland	•	•	•	•	6-0	4.2	5·1

The number of divorced persons marrying in England has increased twelve-fold since 1861, and three-fold since 1870.

#### D.—RELATIVE INCREASE OF DIVORCES (KUMMER).

	1851-5 <b>5.</b>	1856-60.	1861-65.	1866-70.	1871-75.	1876-80.
France.	100	128	150	190	163	225
Belgium	100	140	160	190	280	420
Holland	100	100	112	115	139	151
Saxony	100	83	75	72	80	105
Sweden	100	98	109	113	132	161

#### E.—RATIO IN CITIES.

## NUMBER OF DIVORCES, PER 1000 MARRIAGES,

Christiania		2	Hague		11	Paris	25
Prague						Stockholm .	28
Antwerp .		8	Brussels .		14	Copenhagen .	29
Ghent		3	Munich .		15	Breslau	31
London		4	Frankfort		17	Bucharest .	44
Cologne		6	Rotterdam		20	Boston	73
			Vienna .		23	San Francisco	223

#### DOCKS-DOGS.

## F.—Increase in France and Belgium.

## DIVORCES, PER 1000 MARRIAGES.

Period.		France.	Paris.	Belgium.	Brussels.
1826-30		1.1	4.0	1.0	4.1
1831-40		1.8	7.0	1-2	5.3
1841-50		3.8	9-9	1.4	6.6
1851-60		4.3	15.6	2.4	9-9
1861-70		5.6	22.9	2.9	11-2
1871-78		6.3	24.9	5.1	12.4

#### G.—DIVORCE AND SUICIDE COMPARED.

	Divorces, per 1000 Marriages,	Suicides, per 100,000 Inhab.		Divorces, per 1000 Marriages.	Suicides, per 100,000 Inhab.
Ireland .	. 1	17	Germany .	. 17	14.3
England.	. 2	6.7	Denmark .	30	28-2
Scotland.	. 3	4.0	Switzerland	1 51	20-2
Russia .	. 2	2.5	London.	. 4	8.6
Italy	. 8	8.7	Berlin	10	17-0
Sweden .	. 7	8.1	Brussels .	. 14	27·1
Belgium .	. 7	7.1	Vienna	23	<b>2</b> 8· <b>7</b>
Holland .	. 8	9.6	Paris	25	42-2
France .	. 9	15.6	Stockholm.	28	35.4
Austria .	. 10	9.6	Copenhager	ı 29	30-2

**DOCKS.**—Those of London comprise 690, those of Liverpool 543, those of Cardiff 113 acres.

#### COST IN MILLIONS £.

London .			Antwerp.								1-2
			Cherbourg								
Glasgow .	•	7.6	Holyhead	•	•	20	Dundee	•	•	•	0.8

The new docks at Hamburg will cost  $5\frac{1}{2}$  millions sterling. Dock-dues as a rule average 2 shillings a ton in European ports, the charges on a vessel of 1000 tons being as follows:—Liverpool. . . £133 | Hamburg . . £110 | Amsterdam . . £81 London . . . 125 | Antwerp . . 93 | General average 100

The largest lock in the world is that of Cardiff, 600 feet long by 80 in width, ordinary depth of water 36 feet.

#### DOGS.

## A.—Dogs of all Kinds.

				Number Licensed.	Per 1000 Inhabitanta
Great Bri	tain			1,128,000	38
Ireland				368,000	73
France				1,864,000	49
Germany		_		1.432.000	31

Sheep-dogs are not taxed in the United Kingdom, and the total number of dogs in the kingdom is at least 2,000,000, say 55 per 1000 inhabitants, worth £800,000. It is found that 100 male dogs go mad, as compared with 14 female. A dog accidentally locked up at Metz passed 39 days without food, and recovered.

## R.—Hunting-Dogs in United Kingdom.

Stag-hounds		England. 604	246	•••	U. Kingdom 850
Fox-hounds		12,866	1,522	660	15,048
Harriers		3,258	1,516	•••	4,774
Beagles .	•	448	•••	74	522
Total		17,176	3,284	734	21,194

## C.—Brain of Dogs, in Drams.

Sheep-do	g		29.5	Retriever	25.7	Greyhound .	23.4
Fox-houn	ıd		29-2	Collie	25.4	Terrier	20.0
Setter			26.1	Bull-dog	24.0	Spaniel	18.1
Mastiff			26.1	Newfoundland	24.0	Lap-dog	18.0

As compared with the above, the wolf has 42, the jackal 15, the fox 13 drams.

**DRAINAGE.**—Subsoil drainage in England costs on an average £5 per acre, and produces 5 bushels more wheat, say 20 per cent. extra. Reclaiming land in Scotland costs about £17 per acre.

For drainage of towns, see Sewers.

#### DRINK.

#### A.—Consumption in United Kingdom.

	MILLIONS OF GALLONA,							
Year.	Beer.	Spirits.	Wine.	Equivalent in				
1840	640	25.7	6.2	44.3				
1860	770	27.2	7.5	49.9				
1871	980	33.6	16.1	63.9				
1881	1,007	37.0	15.6	67-2				

#### B.—Consumption per Inhabitant.

Year.	GALLONS.								
	Beer.	Spirits,	Wine.	Equivalent in					
1840	24-2	0.97	0.25	1.64					
1860	26.5	0.93	0.26	1.72					
1871	30-6	1.06	0.21	2 02					
1881	28.6	1.05	0.44	1.92					



## DRINK.

154

# C.—Consumption in Three Kingdoms (1881). Gallons per Ingabitant.

				Beer.	Spirits.	Equivalent in Alcohol.			
England				34·8	0.85	2-05			
Scotland				10.2	2-22	1.80			
Ireland				12·1	1-29	1.32			
United K	ingd	om	•	28.6	1.05	1-92			

# ngdom . 28.6 1.05 D.—Expenditure in Drine.

Beer		United Kingdom. £62,800,000	Per Inhabitant. £1 16 0
British spirits		21,500,000	0 12 4
Imported ,,		6,300,000	086
Wine		6,900,000	0 8 10
Cider, &c	•	1,200,000	0 0 9
Total .		£98.700.000	£9 16 5

## E.—Drink of all Nations.

		Alcohol			
	Wine.	Beer.	Spirite.	Equivalent in Alcohol.	Gullone
United Kingdom .	15	1,007	87	67-2	1-92
France	760	190	84	101-0	2.65
Germany	120	880	60	72.4	1.60
Russia	30	63	145	80.6	1.05
Austria	800	245	30	53-0	1.45
Italy	480	20	10	50-2	176
Spain	220	2	. 3	24-0	1.48
Portugal	60	1	1	7.0	1.55
Holland	3	85	12	8-2	2.05
Belgium	4	170	10	11.4	2.07
Denmark	1	25	8	5.1	2.60
Sweden and Norway	2	85	27	15.4	2-27
Europe	1,995	2,673	377	495.5	1.65
United States	80	440	76	66.5	1:31
Colonies, &c	108	81	20	25.2	1.80
The World	2,133	3,194	473	587-2	1.70

## F .- INSANITY FROM DRINK.

#### RATIO OF DIPSOMANIACS TO ALL INSANE.

Italy		12 per cent.	!	United States	26 per	cent.
France		21	!	Scotland .	28	-

## DROWNED, ACCIDENTALLY.

			A.		
				Number Drowned,	Per 1000 Deaths.
England		•		8,690	5.2
Scotland				550	7:5
Ireland				825	3.1
United Kir	igdo	m	•	4,565	6.2
France	·			5,170	6.2
United Sta	tes		•	4,820	5.8

The above is in internal waters only.

#### B.—RATIO OF SEX DROWNED.

			Males,	Females.	
United :	King	dom		76	24
France	. `		•	82	18

## C.—Accidentally Drowned in England (1879).

Boating		•	•	156	Sk	ating	•	•	•	147
Bathing	•	•	•	190	V	rions	٠.	•	•	3,197
	Total			•				3,6	90	

There were 1112 under 12 years of age. The number of drowning persons timely rescued by the Royal Humane Society was 136.

# D.—Drowned in Royal Navy and British Merchant Service.

Period.	Men Drowned,	per Annum.	Ratio per 1000 Affoat.		
renou.	Royal Navy.	Merchant.	Royal Navy,	Merchant	
1866-70	172	2,740	3.6	14-0	
1876-79	133	2,225	2.9	11.3	

## DRUNKENNESS.

### A .- RELATIVE MORTALITY OF DRINK.

#### YEARS OF INTEMPERANCE TO PRODUCE DEATH.

Class.			Liquor.		
Women .		14	Beer .		22
Gentlemen.		15	Spirits		17
Working class	•	18	Mixed		16

This shows that the working class can stand drink longest, and that beer is the least deadly form of intemperance.

## B.—DEATHS FROM DRINK.

					Number.	Per 1000 Deaths of Population.
England					1,082	2.04
Scotland	÷				230	8-29
Ireland					280	2.78
		_				
United :	King	dom	•	•	1,592	2 <del>·2</del> 7
France	•	•	•		872	1.05
Belgium					456	3.83
Sweden					502	6-25
Norway					72	2.36
Switzerlan	d				244	<b>8</b> ·81
Italy .					709	0.85
New York		•			324	12.08
т	'otal	_	_	_	4,771	1.81

## C .- Value of Life, Drunk and Sober. EXPECTANCY OF YEARS.

Age.	Drunk.	Sober.
20	15	44
30	14	36
40	11	29

## D.-Intemperance in United Kingdom.

					Annual Result.			Annual Result.
Deaths					1,592	Sick .		84,000
Insane						Loss of work		£7,400,000
Crimes	•	•	•	•	6,140	Extra taxes	•	£1,700,000

## E.-FINED FOR DRUNKENNESS, ENGLAND.

Year.			Number.	Per 1000 Inhab.
1860			88,410	4.4
1870			137,200	6.0
1879			178,429	7.0
1881			174,481	67

In France 61,000 persons were fined for drunkenness in 1881, showing a decline.

## F.—Drunkenness in Large Towns.

	C	ases per Annum per 1000 Inhab.		er Anni 000 Inha	in.		
London .	•	. 5	Limerick		٠.	35	
Leeds .		. 7	Glasgow			88	
Nottingham		. 9	Liverpool			42	
Belfast .		. 21	Dublin .			43	
Manchester	-	91	Cork	-	-	56	

The ratio for London is not reliable, although numerically

correct, as the authorities no longer treat drunkenness in the metropolis as a misdemeanour unless attended with disorder.

#### DWARFS.

Name.	•		Height Inches).	Date of Birth,	Birthplace.
Borowlaski .		.`	39	1739	Warsaw.
Tom Thumb			81	1838	New York.
Mrs. T. Thumb			32	1842	,,
Che-Mah .			25	1838	China,
Lucia Zarate			20	1863	Mexico.
General Mite			21	1864	New York.

Count Borowlaski was a friend of George III., and one of the most accomplished men in London society. Tom Thumb's real name was Charles Stratton.

#### DWELLINGS FOR WORKING CLASSES.

City.		Built by	No. of Tene- ments.	Sum Spent.	Rent per Week	
London		Peabody.	2,790	£780,000	4/6	
		Metrop. Assn.	900	241,000	6/	
		Industrial Assn.	2,000	696,000	5/	
Paris		Montmartre Co.	2,870	800,000	8/	
Dublin		Corporation.	270	40,000	4/	
Liverpool .			146	68,000	6/	
Glasgow		, ,,	400	90,000	6/	
Birmingham		15	700		411	
Salford		100	230	50,000	5/	
Greenock .		1 11	432	115,000	**1	
Huddersfield	١.	11	100	440		

Government loans for the above purposes amount to two millions, of which 90 per cent. are for English towns. In 1865 Mr. George Peabody gave £500,000 to erect in London suitable buildings for working men's families, at moderate rents. In January 1882 the buildings comprised 6160 rooms, in 2789 holdings, and were occupied by 11,460 persons, who paid an average rent of 2 shillings per room, or 4s. 6d. per family, weekly. The death-rate in 1881 was only 17 per 1000, or 4 per 1000 less than the London rate for same year. The average earnings of each family were 24 shillings, so that the rent came to be 18 per cent. of same. New tenements were opened in 1881 for 430 families, but the applicants exceeded 3000. The original fund of £500,000 now reaches £780,000, owing to profits: cost of management only £800 a year.

Buildings for working-classes in London cost 6 to 8 pence per cubic foot, and sites 2 to 5 shillings per square foot: accommodating occupants at an average expenditure of £36 per head. Average rent 2s. a week per room.

**DYNAMITE.**—Messrs. Nobel of Glasgow make 1200 tons yearly. See *Explosives*.

## $\mathbf{E}$

EARTHQUAKES.—Since the beginning of the 18th century the most destructive have been the following:—

Year.	Place.		Lives Lost,	Year.	Place. L	ives Lost,
1703	Yeddo .		190,000	1778	Guatemala	83,000
1716	Algiers .		18,000	1797	Quito	41,000
1726	Palermo		6,000	1822	Aleppo	22,000
	Pekin .				Mendoza, S. Amer.	
1754	Cairo .		40,000	1868	Arica ,,	6,000
					Manilla	

#### EARTHWORKS.

	C	cost, Cubic Yd.	1		Cost, Cubic Yd.
England	•	21 pence	Panama Cans	ı.	15 pence
Suez Canal	•	12,,	Cyprus		6,,

The earthwork of the Thames Embankment involved the filling in of one million cubic yards.

## EDUCATION.

#### A.—Progress since 1830.

	Batio o	Adulta Write.	able to	Ratio of School Children to Population.			
	1830.	1850.	1881.	1880.	1860.	1881.	
England	55	64	84	7	8	15	
Scotland	77	83	88	9	10	15	
Ireland	46	55	67	5	6	18	
France	42	57	78	6	9	13	
Germany	81	86	94	16	16	17	
Russia	1	2	11		1	2	
Austria	28	34	49	5	6	9	
Italy	16	28	41	2	4	8	
Spain and Portugal.	9	18	34	8	4	5	
Switzerland	78	80	88	13	14	16	
Belgium and Holland	41	62	86	10	11	15	
Scandinavia	80	82	87	13	14	15	
United States	80	84	90	15	17	18	

The ratio of school children attending school is usually two-thirds of those enrolled (in Ireland less than half), so that the number of children at school compared to population is only 11 per cent. in England, 9 per cent. in France, and 12 per cent. in United States.

## B.—Schools, Teachers, and Pupils.

					THOUSANDS.			
					Schools.	Teachers,	Pupils,	
United K	ingdo	m			28	57	5,251	
France					74	119	4,950	
Germany					78	101	6,982	
Russia					82	40	1,240	
Austria					81	52	8,690	
Italy					47	52	2,515	
Spain	-		-	-	28	80	1,428	
Switzerla	h		Ĭ		5	10	411	
Belgium		•	•	-	6	12	690	
Holland	•	•	•	•	Ă	- <del>7</del>	490	
Scandinav	ria.	•	•	•	17	18	1,100	
Roumania		•	•	•	2	-4	110	
200	•	•	•	•				
Euro	De				347	502	28,857	
United St			-		177	273	9,705	
Canada					13	16	860	
Australia					6	13	611	
Argentine		ublic	٠.		2	6	164	
Brazil			•		6	8	188	
Egypt	•	:		-	6	6	170	
India	•	-	•	:	83	87	2,196	
Japan				•	26	60	2,161	
<b>F</b>	•	•	•	•				
	Tot	al			660	963	44,724	

C.—	-Edu	CAT	TON OF	UNITED I	Lingdom. 😰
England			Schools. 17.614	Teacher	
Scotland	•	•	3,056	5,880	
Ireland.	•	•	7,590	10,674	468,550
United Ki	ngdo	m	28,260	57.410	3,624,450

The above shows the average number of children attending school: Table B, the number on the rolls.

	Average	Percentage		Highest Classes.
England . Scotland .	Attendance. 75 per cent. 72		No. 370,000	Ratio. 13½ per cent.
Ireland .	45 "	47	82,000 82,500	21 ,, 18 ,,

The last column shows the percentage of children on the rolls who passed the three highest classes. According to the Irish Census of 1881, the proportions of persons who could read and write were 54 per cent. among Catholics, 75 per cent. among Protestants, and 59 per cent. of the whole population, as against 49 per cent. in 1871.

## D.—Annual School Funds and Outlay.

			Thousands.	Cost per P	upil.	Per I	abet	itant
United King	gdom		£6,685	£1 17	Ō	£0	4	3
France .	•		3,200	0 12	0	0	1	6
Germany .			6,900	1 4	0	0	3	0
Russia .			1,000	0 17	0	0	0	3
Austria .	•		2,900	0 19	0	0	1	8
Italy			1,100	0 12	0	0	0	10
Spain .			1,200	0 15	0	0	1	6
Holland .			500	1 1	0 `	0	2	6
Belgium .			900	0 19	0	0	3	4
Scandinavia			<b>5</b> 00	0 9	0	0	1	3
Switzerland	•	•	200	0 10	0	0	1	6
Europe			£24,685	1 0	<u> </u>	0	1	8
United Stat	es .		16,830	1 15	0	0	6	6
Canada .			1,050	1 9	0	0	5	0
India .			1,280	0 1	3	0	0	2
Australia .			1,660	58	0	0	12	0
Argentine F	Republic	•	850	2 2	0	0	3	2
Total .	•		£44,575	£1 0	0	£0	3	0

## E.—School Expenditure, United Kingdom.

	İ	Cost per			
	Subsidy.	Fues.	Rates.	Total.	Pupil.
England Scotland Ireland	2,130 847 658	1,432 252 141	1,486 239 	5,048 838 799	£1 16 8 2 1 6 1 14 0
U. Kingdom .	3,135	1,825	1,725	6,685	£1 17 2

The above does not include extraordinary sums for building, which are provided out of loans, the balance of such loans outstanding in January 1881 being £13,130,000.

#### EDUCATION.

## F .- RELIGIOUS DENOMINATIONS, UNITED KINGDOM.

		School- children,	Percentage.	Cost per Head.
Church of England .		1,539,700	42.8	£1 15 2
Presbyterian		527,400	14-6	2 0 10
Roman Catholic		526,600	14.6	1 12 8
Various	•	1,030,300	28.0	1 18 10
Total		8,624,000	100.0	£1 17 2

## G.—Schools in England and Wales.

			Number	от вспоот.
Voluntary . Board schools			1871. 9,772 82	1881. 14,370 3,692
Total .	•	•	9,854	18,062

## Average Attendance.

			1871.	1851.
Voluntary .			1,827,000	2,008,000
Board schools	•	•	9,200	856,000
Total .			1,336,200	2,864,000

The average expenditure is 42 shillings per pupil in Board schools, and 35 shillings in voluntary.

# H.—Instruction in United States (1880). Schools, Teachers, Pupils

Colleges		364	4,240	69,010
Academies .		1,699	5,960	167,100
Law		49		3,019
Medicine		111		13,320
Deaf and dumb		53	•••	6,390
Blind		30	•••	2,213
Reformatories		67	•••	14,220
Orphanages .		411		751,000
Public schools	_	177.100	272,700	9, 705, 100

#### Average Attendance at School (1880).

	Thou	sands.	Ratio Attending to		
States.	Scholars Enrolled.	Average Attendance.	School Pop., per Ceut.	Total Pop., per Cent.	
New England .	760	541	61	131	
Middle	2,390	1,417	40	111	
South	2,297	1,509	33	10	
West	4,052	2,449	4:2	14	
Pacific	206	133	46	11	
The Union	9,705	6,049	40	12	

L

162

### Expenditure on Public Schools (1880).

States.		Amount.	Ra: Iuh	tio p abita	er nt.	A	r Purverage	re i
New England		£1,908,000	£0	9	6	£3		Ö
Middle .		4.563,000	0	6	9	8	5	6
South		1,479,000	0	2	0	0	19	6
West		7,952,000	0	9	6	8	5	8
Pacific .	•	683,000	0	10	9	. 5	3	0
The Union		£16,585,000	£0	6	6	£2	15	0

This expenditure is merely on primary schools, in salaries, books, and other ordinary outlay.

## I.—Instruction in France.

a			Lay.	Clerical	Total
Schools	•	•	53,800	19,964	73,764
Teachers			70,410	49,150	119,560
Pupils	٠	•	8,145,000	1,805,000	4,950,000
			Male.	Female.	Total.
Schools			43,494	30,270	73,764
Schools Teachers Pupils	:	:			

Of the total number of pupils 58 per cent. are free, and 42 per cent. pay for their education.

## K.—Instruction in Germany (1871).

	Schools.	Teachers.	Pupils,	Pupils to Population per Cent.
Prussia	34,988	57.936	4,008,000	16
Bavaria	7,184	11,921	841,000	17
Saxony	2,134	7,219	451,000	16
Baden	1,957	3,603	245,000	16
Other States	6,540	11,320	784,000	15]
Total	52,803	91,999	6,329,000	16

### L.—Instruction in Italy.

Pupils.			Public. 1,049,000	Private.	Total
Boys .	•	•	1,049,000	<b>63,0</b> 00	1,112,000
Girls .		•	853,000	92,000	945,000
Tota	1.		1.902,000	155,000	2.057.000

Besides the above there are 456,000 persons attending night-schools, and 11,140 at universities. The ratio of children attending school to population is  $11\frac{1}{2}$  per cent. in the North,  $6\frac{1}{2}$  in Central Italy,  $5\frac{1}{2}$  in Naples, and  $4\frac{1}{2}$  per cent. in Sicily.

## EDUCATION—EGGS.

## M.-Instruction in India.

Governmen	t			Schools. . 16,649	Pupils, 769,000
Assisted	•	•	•	. 50,207	1,112,000
<b>Voluntary</b>	•	•	•	. 15,705	815,000
Total				. 82,561	2,196,000

The State expenditure on schools is £1,280,000 per annum, or 16 pence per pupil.

## N.—Instruction in Canada (1879).

Ontario		8chools. 5,123	Teachers. 6.596	Pupila. 487,000
Quebec		4.282	6,132	239,000
Nova Scotia .		1,935	2,011	84,000
New Brunswick		1,895	1,500	54,000
British Columbia	•	51	58	2,000
Total		12,786	16,297	866,000

## O. - Instruction in Australia (1880).

	l		P			
	Schools.	Teachers.	Enrolled.	Average Attendance.	Expenditure.	
N. South Wales	1,910	3,393	169,000	72,000	£475,000	
Victoria	2,430	4,950	269,000	120,000	553,000	
New Zealand .	836	2,681	84,000	63,000	884,000	
South Australia	370	837	36,000	20,000	87,000	
Queensland .	838	924	43,000	24,000	124,000	
Tasmania	171	323	12,000	8,000	24,000	
West Australia	102	108	5,000	3,000	10,000	
Total	6,157	13,216	618,000	311,000	£1,657,000	

#### EGGS.

## A.

		Millions I	Annual Con-		
		Production,	Consumption.	sumption per Inhabitant.	
United Kingdom .		2,150	2,920	85	
France		4,330	3,920	105	
Germany		3,600	3,600	80	
Italy		1,840	1,330	48	

Hen eggs range from 72 to 80 per cent. of the total in the above countries: they average a little under 2 ounces in weight, say 20,000 per ton. The United Kingdom imports 22 eggs per inhabitant yearly, as against 14 in 1870.

## ELECTORS.

## B.—Exporting Countries.

		Millio	ns Eggs	Yearly.	Value (Thousands Omitted).				
Ye	ar.	France.	Italy.	Canada.	France.	Italy.	Canada		
1861		 264	42 .	12	· £710	£67	£19		
1865		602	40	9	1,500	68	20		
1870		499	129	81	1,250	206	65		
1875		688	182	47	1,860	344	106		
1880		428	502	109	1.202	1.450	230		

## C .- IMPORTS INTO UNITED KINGDOM.

Year,		¥	lillions.	Per Inhab.				Per Inhab.
1853			123	44	1870		431	14
1860			163	6	1875		741	23
1865			364	12	1881		757	22

## ELECTORS.

## A.—Number per 1000 Inhabitants.

	Enrolled.	Voted.			arolled.	Voted.
United Kingdom	. 130	100	Switzerland		242	•••
France	. 263	158	Italy		22	14
Germany		120	Portugal .			86
Austria	. 59	40	Belgium			13

## B.—ELECTORS IN UNITED KINGDOM.

		Thousands	Per 1000 Inhabitanta.			
	1835.	1871.	1881.	1835.	1871.	1881.
England	668	2,066	2,538	45	90	98
Scotland	73	260	310	29	79	83
Ireland	98	227	229	12	41	44
U. Kingdom	839	2,553	3,077	33	81	88

	1	Thousands,							
	County.	Borough.	University.	Total.					
England	933	1,592	13	2,588					
Scotland	97	201	12	310					
Ireland	168	57	4	229					
U. Kingdom .	1,198	1,850	29	8,077					

The new franchise of 1884 has raised the number of electors to 6 millions. See Appendix.

## ELECTORS—ELECTRIC LIGHT. 165

## C .- BOROUGH FRANCHISE, UNITED KINGDOM.

	Electors (Thousands)	Percentage of Pop.		Electors (Thousands).	Percentage of Pop.
Belfast	22	12	Hull	27	18
Birmingham	64	16	Leeds	50	16
Bolton	15	34	Liverpool .	62	11
Bradford	27	15	London .	329	9
Brighton	16	15	Manchester	. 75	14
Bristol	26	13	Newcastle.	25	17
Dublin	. 14	4	Nottinghan	n 19	10
Dundee	16	13	Oldham .	22	20
Edinburgh .	. 29	13	Sheffield .	43	15
Glasgow	. 60	12	Sunderland	17	15

## D.—Representation of United Kingdom.

			Re	presentation.	Revenue.	Population.
England				75.0	77.1	74.6
Scotland	•			9-2	12.4	10.7
Ireland	•	•		15.8	10.2	147
United	Kin	gdom		100.0	100.0	100.0

## E.-Voters in France, August 1881.

Class.			Thousands.	Per Cent.
Republicans			4,570	45.7
Orleanists			1,103	11.1
Bonapartists			538	5.4
Not voted	•	•	3,740	37.8
	Total		9,951	100.0

## ELECTRIC LIGHT.

## A.—Greatest Lights.

		,	Candle Lowe
Electric moon, San Josè, California	•		24,000
Chandelier, Crystal Palace			3,000
Chandelier, Palais d'Industrie, Paris			150,000
Marseilles Lighthouse			40,000
Sydney Lighthouse			180,000

## B.-LANE-FOX SYSTEM.

Horse Power.	Lights.	Candle Power.	Aggregate Caudle l'ower.
3	36	10	860
5	80	20	600
8	40	25	1,000
20	60	40	2,400

#### ELECTRIC LIGHT.

#### C.—BRUSH SYSTEM.

#### ENGINE 40 HORSE POWER.

Number of Lights,	Candle Power.	Aggregate Candle Power.
1	150,000	150,000
12	8,000	96,000
40	2,000	80,000
400	150	60,000

One engine of the above power feeds 400 lamps on a line of 30 miles, consuming 150 lbs. coal per hour, as compared with 1 ton per hour for gaslight over the same length.

## D.—Cost of Jablochkoff Light.

#### COST PER HOUR, 100 CANDLE POWER.

Year.		Pence.	Year.		Pence,
1877		6	1880		2
1878		4	1881		14
1879		3	1882		1

#### E.—Cost of Lighting.

Name.	Where.	Candle Power.	Pence per hour.
Siemens	British Museum	5,000	24
Brush	Kensington Museum	2,000	10
•••	Marseilles	40,000	27
Jablochkoff	Thames Embankment	200	2
Arc light	Liverpool Docks	6,000	15
Swan	Nottingham	20	01

The San Josè electric moon stands on a tower 200 feet high, is worked by a 9-horse engine, and shows light for 2 miles around. The Sydney light is visible 50 miles, and has an intensity equal to 12 millions of candles, being the largest light yet made. The Marseilles light gives 6 times more light than the old system, at a saving of 9d. per hour. The Kensington Museum saves £235 a year by the change. The smallest lights are Swan and Edison's arc lights of 8 candle power for domestic use.

The contract with the Nottingham Municipality in May 1883 was for works and plant for supplying 60,000 Swan lamps of 20 candle power. The cost of instalment was £220,000, and after allowing for all expenses and interest on capital, the electric light would cost 40 per cent. less than gas, and give 40 per cent. more light.

#### ELECTRIC MOTOR.

1873. At the Vienna Exhibition a pump was worked at a distance of 1400 yards by means of an electric wire.

1879. At Sermaize, La Marne, a field of 6 acres was ploughed in 6 hours with a wire attached to a 12-horse engine a mile distant.

1881. At Oisiel a farmer named Meiner ploughed a large

field by connecting an electric wire with a waterfall.

1882. Project to tap the force of Niagara, by constructing turbines, the power of water being estimated at 10 million cubic feet per second, or 8 million horse-power, and to transmit this force through the United States. Estimated value, £300,000 a day, or 108 millions sterling per annum. A copper wire, half-inch diameter and 300 miles long, would suffice to convey 30,000 horse-power from Niagara to New York.

1883. Four electric locomotives constructed by the New York Railway Company to do the work of 160 ordinary locomotives.

Tramcar at Kew, near London, running by electricity at 6 miles an hour, one accumulator of 80 lbs. sufficing for 7 hours' work: cost 6 shillings per day, against 26 shillings worked by horses.

#### ELEVATION OF CONTINENTS.

#### AVERAGE ABOVE SEA-LEVEL.

			Feet.		Feet.
Europe	•	•	670	North America.	1,150
Asia.			1,140	South America.	1,100

EMBANKMENT, THAMES.—Completed, after 8 years of work, in July 1869, at a cost of £1,710,000, the work consisting of—

COMPIGNITE	, 0					
			Cubic Yards.			Cubic Yards.
Brickwork			80,000	Granite .		650,000
Concrete			140,000	Earthwork		970,000

## EMERALD.

Greins.		Value.	Grains.		Value.
5		£5	15	•	£50
10		20	24		100

## EMIGRATION.

## A.—Emigrants from Europe (1820-1882).

			Thousands to					
Nationality	7.		United States.	British Colonies.	South America.	Total.		
British		•	5,877	8,116	77	8,570		
Germans .			4,384	162	68	4,614		
Italians			114	13	581	708		
Spanish and Por	tuev	tese	82	8	406	441		
French			274	81	79	884		
Scandinavians	•		632	15	16	663		
Swiss			110	14	48	172		
Various .		•	815	498	268	1,581		
Total .			11,738	8,852	1,543	17,133		

## B.—Emigration of Ten Years (1872-81).

Fron	α			ď	Emigrants housands).	Percentage of Population,
United K	ingd	lom		•	1,729	5.2
France	. "				71	0-2
Germany					2,411	5.2
Russia					281	0.3
Italy.					1,140	40
Denmark					38	20
8weden					123	2.7
Norway				٠.	81	4.2
Switzerlan	ad				121	4.4
Total					5,995	8:0

## C.—Emigration from Ireland.

Period.	•	Persons Evicted.	Emigrants.	Ratio of Emigrants to Evictions.
1849-60		1,865,000	1,551,000	81
1861-70		236,000	867,000	860
1871-82		311,000	712,000	230
33 ye	ars	2,412,000	3,130,000	130

## RATIOS OF ENIGRANTS.

Sex. Males 53 Females 47	Age. Under 15 . 15 to 35 Over 35	15 75 10	Destination. United States. Colonies. England, &c.	74 14 12
100	-		•	
	]	100		100

## I).-British Emigration, Thirty Years.

	Emigr	ants (Thou	sands).	Ratio to Population.			
	1851-60.	1861-70.	1871-80.	1851-60.	1861-70.	1871–80.	
England	640	650	971	3.4	3.0	4.0	
Scotland	. 183	158	166	6.1	4.9	4.7	
Ireland	. 1,231	867	543	20.1	15.5	10.2	
U. Kingdom	. 2,054	1,675	1,679	7:3	5.5	4.8	

_				Emigrants (Thousands).				
To	•			1851-60.	1861-70.	1871-80.	30 Years.	
United States			•	1,257	1,185	1,088	3,530	
Canada .				222	136	178	536	
Australia.				494	272	303	1,069	
Cape, &c.	•	•	•	81	82	110	273	
Total				2,054	1,675	1,679	5,408	

The above does not include foreigners who sailed from British ports. The net emigration for the decade ending 1880 was only 881,000, the number of returned emigrants (that is, of immigrants into the United Kingdom) amounting to 798,000 in the decade. The remittances by Irish settlers in the United States to their friends in Ireland between 1851 and 1881 amounted to  $24\frac{1}{2}$  millions sterling, including £1,510,000 in 1881. British emigrants in the 5 years ending 1880 averaged 24 per cent. cabin and 76 per cent. steerage passengers.

## E.—Emigration from Italy (12 Years).

Year. 1870		Number. 111,000	To France, &c			atio. er cent.	
1871-80 . 1881	•	1,102,000 136,000	South America Barbary, &c.		41 1 15	,,	
	•	1,349,000	Daisary, we	-		er cent.	

## F.-ARRIVALS IN UNITED STATES.

		Т	housands.			1	housands.
1821-30			143	1861-70			2,493
1831-40			609	1871-80			2,731
1841-50			1,706	1881 .			669
1851-60			2,598	1882 .			789
			•		 		

Total for 62 years . . . 11,738,000 immigrants.

British and Germans averaged 60 males to 40 females, Spaniards and Italians 70 to 30 respectively.

## 170 EMIGRATION—ENCLOSURE OF LANDS.

## G.—Settlers in United States (60 Years).

_	From 182	0 to 1880 (T Omitted).	Ratio of	Ratio of		
From	Arrived.	Died or Departed.	Living in 1880.	Survivors.	Total.	
				Per Cent.	Per Cent.	
Ireland	3,538	1,683	1,855	52	29	
England	1,105	359	746	66	12	
Scotland	195	24	171	86	8	
United Kingdom	4,838	2,066	2,772	57	44	
Germans	3,212	1,245	1,967	60	31	
Canadians	826	109	717	88	11	
Scandinavians	427	51	876	88	6	
French	845	238	107	31	2	
Chinese	231	126	105	44	2	
Various	402	120	282	70	4	
Total	10,281	3,955	6,326	61	100	

						From 1790 to 1880 (Thousands Omitted).							
Date.						Immigration.	Died or Left.	Surviving.	Ratio of Survivors.				
1800						50	6	44	Per Cent.				
1820				:	:	234	57	177	75				
1840						986	127	859	86				
1850						2,692	451	2,241	83				
1860						5,290	1,154	4,136	78				
1870						7,783	2,217	5,566	72				
1880						10,515	4,180	6,335	60				

The Census of 1880 gives 6,680,000 foreigners surviving, but this must be 345,000 too much, unless the German or Irish survivors be more than stated in the Census, as above.

ENCLOSURE OF LANDS.—In 120 years more than 10 million acres of waste land in the United Kingdom have been enclosed, viz.:—

				Thousands of Acres,			
Period. 1760–1800				Quantity. 3,221	Per Annum.		
1801-1829		•		3,380	116		
1830-1869				2,217	55		
1870-1879		•	•	1,687	169		
	To	tal		10,505	88		

It is doubtful whether the reclaimed lands are now worth what they have cost.

ENCUMBERED ESTATES, IRELAND.—The first sale was on February 19, 1850. The sales have been:—

Years.			Acres Thousands).	Millions £.		rice Acre.
1850-60 .		•	2,820	25.2	£8	18 0
1861-70 .			1,300	15.6	12	0 0
1871-80 .	•	•	<b>8</b> 0 <b>5</b>	12.0	15	0 0
Tot	al.		4.925	52.8	£10	8 0

The lands were sold in 12,400 lots, averaging almost 400 acres each: the purchase-money represented 85 per cent. by Irish, and 15 per cent. Scotch or English buyers.

ENTRIES.—The following table does not include coast-traffic, but only the tonnage of sea-going vessels that entered the ports of the several countries, as follows:—

### A.—Tonnage of Port-Entries.

		Tons (Th	ousands).	
	1850.	1860.	1870.	1880.
United Kingdom .	7,250	12,345	18,120	29,074
France	2,305	4,228	6,803	12,665
Germany	1,200	2,300	3,490	6.185
Russia	1,100	2,107	3,518	6,303
Austria	1,800	2,600	3,494	4,514
Italy	1,300	2,400	3,835	4,460
Spain	1,000	1,298	1,772	2,784
Holland	870	1,324	1,830	3,446
Belgium	80 <b>0</b>	1,000	1,535	3,545
Sweden and Norway	1,232	1,710	3,790	4,830
Denmark	400	700	710	2,050
Greece	800	1,000	1,270	1,790
Europe	20,057	33,012	50.167	81,646
United States	3,240	5,004	6,270	15,253
British Colonies .	7,300	10,880	15,200	28,260
The World	30,597	48,896	71,637	125,159

The entries of the world summed up in three items show these ratios:—

	2.0
United States 10.6 10.2 8.8 1	2.2
	380. 5•8

# B.—Entries Compared with Commerce.

ENTRIES.

			Ton of En	tries.			
				1850.	1860.	1870.	1880.
United Kingdo	m	•		£23	£26	£25	£20
France .				60	44	35	26
Germany .		•		95	70	61	51
Russia .				36	27	80	20
Austria .				17	20	24	29
Italy .		•		24	19	19	22
Spain .		•	•	15	18	17	15
Holland .				50	42	39	35
Belgium .		•		44	48	42	33
-Scandinavia				12	13	9	8
Europe .				32	30	28	24
United States		•		20	28	27	20
British Colonie	:5	•		13	18	13	13
The World				27	26	25	21

The commerce for each country in the above table means the aggregate of imports and exports, without goods in transit.

## C.—Tonnage Entries to Population.

		Tons per 100 In- habitants.		Ratio of Steam Tonnage.		
		1860.	1880.	1865.	1860.	
United Kingdom .		42	83	32	66	
France		11	33	41	65	
Germany	.	7	14	40	56	
Russia	. 1	8	8		70	
Austria		8	12	47	84	
Italy	. 1	11	15	44	69	
Spain		9	17	l <b>.</b>	l	
Holland		40	85	45	72	
Belgium		20	63	42	80	
Sweden and Norway	. 1	33	75	12	37	
Denmark		44	110		60	
Greece		75	93	50	69	
Europe	.	13	27	36	62	
United States	.	17	30	26	50	
British Colonies		7	12			
The World	.	10	23	30	52	

## D.—Tonnage Entries of United Kingdom.

_			1	Tons (Thousands).								
Year.		Sea-going.	Coasting.	Total,	100 In- habitants							
1801 .		•	1,720	6,000	7.720	48						
1810 .			2.070	7,000	9,070	51						
1820 .			2.110	8,000	10,110	50						
1830 .			2,940	8,240	11,180	46						
1840 .			4,720	12,600	17.820	66						
1850 .			7,252	21,510	28,762	105						
1860 .		:	12.345	24,400	36,745	125						
1870 .	_	:	18,320	28,850	47,170	151						
1880 .		:	29.074	86,136	65,210	187						

The Navigation Laws were repealed in 1849, since which date our shipping traffic has increased six times faster than population.

E.—SEA-GOING ENTRIES OF UNITED KINGDOM.

Year. 1840 1850 1860	!	Ratio of		
Year.	British.	Foreign.	Total.	British, per Cent.
1840	8,245	1,475	4,720	69
1850	4,722	2,530	7.252	65
1860	6,957	5,387	12,345	56
1870	12,536	5,780	18,320	69
1880	20,674	8,690	29,364	70

The American flag stood for 12 per cent. in 1860, and for less than 2 per cent. in 1880.

F.-Entries in United States Ports.

_	To	ns (Thousa	Percentage.				
Flag.	1860.	1870.	1881.	1860.	1870.	1881.	
American	3,302	2,452	2,919	66	40	18	
British	1,263	2,792	8,458	25	45	54	
German	231	679	1,173	5	11	8	
Scandinavian .	32	108	1,035	1	11	7	
Italian	32	48	659	Į	1	4	
French	24	81	305	1	1	2	
Spanish	63	81	277	1 1		2	
Various	56	79	805	1	1	5	
Total .	5,003	6,270	15,631	100	100	100	

## ENTRIES.

## G.—Entries in French Ports.

Period,		Tons (Thousands Omitted).	Steam, Ratio, per Cent.	French Flag, per Cent.		Tons Entries per 100 ln- habitants.
1837-46		2,036	17	85	65	6
1847-56		2,822	23	39	61	8
1857-66		4,760	85	40	60	13
1867-76		7,450	54	83	67	20
1877-80		10,830	64	80	70	80

## H.—Entries in British Colonies.

	To	ns (Thousa	nds).	Tons	per 100	Inbab.		
	1860.	1870.	1880.	1860.	1870.	1880.		
India	1,470	2,005	2,849	1	1	14		
Singapore	680	825	2,404	240	280	782		
Ceylon	395	712	1,453	20	33	59		
Mauritius	802	230	271	97	70	75		
Hong-Kong	778	1,320	3.039	650	960	1.870		
Australia	1.483	2,121	4.276	105	107	150		
S. Africa	287	210	1,005	75	40	75		
Canada	2,648	3,147	3,693	89	85	88		
West Indies .	541	767	1.785	50	62	130		
Gibraltar	982	1,478	3,222	6,000	7.000	16,000		
Malta	929	1.492	3,074	700	1,050	2,000		
Various	415	922	1,190					
Total .	10,910	15,229	28,261	7	8	12		

The above does not include coasting trade.

## I.—Australian Entries.

	Ton	s (Thousan	ds).	Tons per 100 Inhab.				
	1860.	1870.	1880.	1860.	1870.	1880.		
New S. Wales .	430	731	1,216	117	140	160		
Victoria	590	672	1,090	110	91	125		
New Zealand .	140	270	410	140	160	85		
S. Australia .	105	144	601	84	75	230		
Queensland	42	180	628	120	108	95		
Tasmania	117	106	206	130	104	91		
W. Australia .	59	68	125	350	250	420		
Total .	1,483	2,121	4,276	118	110	154		

## K .- Entries into British Ports in 1880.

	Thousand	ds Omitted.		
From	Tons Entries.	Value, Imports, (Millions &).	Value per Ton.	Cleared Tons (Thousands.)
United States	5,300	107	£20	3,700
France	2,050	42	21	3,500
Germany	1,700	24	14	2,600
Scandinavia	2,500	16	6	1,900
Russia	1,700	16	9	1,400
Spain	1,900	11	6	800
Canada	1,600	13	8	900
Holland	1,300	26	20	1,400
India	1,100	80	27	1.800
Belgium	900	l ii l	12	1,000
South America	600	15	25	1,200
Australia	500	26	52	600
Various	2,900	74	26	4,900
Total .	24,050	411	£17	25,700

The above includes only vessels with cargo. See Ballast, Commerce, &c.

ESTATES SOLD.—The sales of real property in London range from 7 to 10 millions sterling per annum. The sales of farm-lands in England, reported in the London newspapers, were as follows:—

Period.			Acres.	Price per Acre
1860-61	•	•	71,360	£45 10 6
1870-71			43,276	41 11 0
1880_81			27 783	98 19 0

The above does not include Wales, nor any estates of ornamental or exceptional value.

#### EVICTIONS, IRELAND.

_	Years.  1849-51  1852-60  1861-70  1871-80  1881-82	The	Thousands of Families.					
Years.			Evicted.	Re-admitted.	Net Evictions.			
1849-51			263	73	190			
1852-60			110	28	82			
1861-70			47	8	39			
1871-80			41	6	35			
1881-82			21	4	17			
Total,	33 years		482	119	363			

The number of persons actually evicted was over 2 millions (say 70,000 per annum), about 35 per cent. of the population.

## EXCHANGE

## A.—PRINCIPAL MARKETS SINCE 1840.

D		London o	n	Calcutta on	Price of		
Period.			Amsterdam.	London.	Silver per Os., Pence.		
1841-50	25.76	13.12	12.1	23·1	59.8		
1851-60	25.44	13.08	11.4	25.1	61-6		
1861-70	25.46	13.09	11.6	24.3	<b>6</b> 0·5		
1871-80	25.55	20.62	12.3	21.6	56.1		
1881-82	25.53	20.67	12.5	19-9	51.7		

## B.-London on Paris since 1800.

Period.	1	Highest.	Lowest	A verage.	Date of Highest	Date of Lowest.
<b>1800</b> -10 .		25-2	19.6	22.4	1805	1809
1811-20 .		26·1	17 <del>-6</del>	22-0	1816	1811
1821-30 .		25.9	25.2	<b>25 6</b>	1829	1824
1831-40 .		2 <b>5</b> -9	25-2	25.5	1832	1831
1841-50 .		26.7	24.9	25.8	1848	1850
1851-60 .		25.5	24.9	25.4	1856	1851
1861-70 .		25·5	25.0	25.4	1869	1869
1871-80 .		26.9	25:2	256	1872	1874

### EXCISE

## A.—British Excise since 1800.

	M	illions £.	Per	Inh	ab.	1		M	illions £.	Per	Inb	ab.
1801-11.		12.4	£0	14	6	18	52-61		18-1	£0	12	10
1812-31.		15.6	0	15	6	18	62-71		20.4	0	13	7
1832-41.		18.5	0	15	2	18	72-81		26·8	0	16	3
1842-51.		15.1	0	11	4	i						

## B.—Incidence of Excise.

<i>a</i>	A	mount (1	Per Inhabitant.						
Class.	Spirits.	Beer.	Sundries.	Total.	Liquo	Total			
Affluent .	520	280	820	1,620	£0 14	0	£1	8	2
Middle .	4,490	2,240	2,580	9,310	0 14	1	0	19	6
Working .	9,264	6,010	970	16,244	0 12	8	0	13	5
Total .	14,274	8,530	4,370	27,174	£0 13	0	£0	15	6

For other countries, see Liquor Duties.

EXECUTIONS.—The largest number was in the reign of Henry VIII., in which period 71,400 persons were hanged or beheaded: in one year 300 beggars were executed for soliciting alms. In the first half of the present century 2734 persons were executed in England and Wales:—

For " "	incer	ler . lary . ndiari ery, &	ım	:	:	:	:	1,2	316 235 147 736	
		Total	l	•	•			2,7	734	
Cars.						Exe	cute	d.	Per	Annum
01-20						1,0	697			85
21-30						(	872			67
31-50	•					:	365			18
						_				
	T	'otal				2,	734			

In one year (1820) no fewer than 46 persons were hanged for forging Bank of England notes, some of which were afterwards asserted to be good. In 20 years ending 1880 there were 279 criminals executed for murder in the United Kingdom, say 14 yearly.

Capital punishment was abolished in Italy in 1875; murders increased 42 per cent. The Swiss Convention of 1881 reformed the constitution so as to permit the cantons to restore the use of capital punishment.

Between January 1879 and December 1882 there were in France 90 assassins condemned to death, but only 10 were executed.

In India the average number of executions is 710 yearly.

#### EXHIBITIONS.

Date.	Place.	Area (Acres).	Visitors (Millions).	Days Open.	Receipts (Thousands).	Per Visitor (Pence).
1851 .	London .	. 21	6.2	141	£424	16
1855 .	Paris	. 24	4.5	200	128	7
1862 .	London .	. 23	6.3	171	408	16
1867 .	Paris	. 37	9.3	217	420	11
1873 .	Vienna .	. 48	7.3	186	206	7
1876 .	Philadelphia	a 55	10· <b>2</b>		•••	
1878 .	Paris	. 60	16.1	194	974	15

#### EXPLOSIONS.

Date.	Place.	Killed.	Date.	Place.	Killed
1654 .	Gravelines	3,000	1837 .	Bona, Algeria	320
1769 .	Brescia	2,800	1854 .	Newcastle	100
1794 .	Grenelle	2,700	1864 .	Retiro, B. Ayres	440
				М	



178

## EXPORTS.

## EXPORTS.

## A.—ALL NATIONS.

	Millions &.			Shillings per Inhabitant.			
	1860.	1870.	1882.	1860.	1870.	1882.	
United Kingdom .	136	200	241	91	127	137	
France	91	112	144	50	60	76	
Germany	75	110	149	42	55	66	
Russia	21	43	48	6	lii	l ii	
Austria	26	40	72	15	23	39	
Italy	19	30	47	18	24	33	
Spain	11	16	22	14	20	27	
Portugal	4	5	6	20	28	27	
Belgium	19	28	52	84	112	190	
Holland	20	32	59	110	168	295	
Denmark	7	9	8	95	100	82	
Sweden and Norway	8	13	15	30	48	47	
Greece	1	1	8	15	15	34	
Europe	438	639	866	33	44	57	
United States	66	68	153	42	85	59	
Canada	11	17	21	67	85	96	
Australia	22	28	50	325	280	350	
Cape Colony	2	3	9	96	90	176	
India	29	54	75	4	7	7	
China	18	21	23				
Egypt	8	16	14	60	80	62	
West India (British)	4	5	6	82	95	96	
Brazil	7	18	24	18	39	52	
Argentine Republic.	5	8	13	62	83	104	
Chili	4	6	9	38	45	63	
Total	614	883	1,263	·			

## B.—BRITISH EXPORTS, ANNUAL VALUE.

Year.	7	Thousands £.	Per	Inh	Ab.	Year.	T	housands &	Per	Inh	ab,
1355 .		294	£0	2	б	1800-5		37,992	£2	7	0
1573 .		1,880	0	8	2	1830-50		51,220	2	1	0
1614 .		2,091	0	8	3	1851-60		107,150	3	16	0
1687 .		4,087	0	15	1	1861-70		166,340	5	10	6
1700-5		6,476	1	8	0	1871-80		221,190	6	12	0
1750-80		13,420	1	19	0	1882 .		241,060	6	17	0

# EXPORTS.

## C.—Components of Export Trade.

		Millions	£.	Al	iquot Pa	rts,
	1860.	1870.	1880.	1860.	1870.	1880.
Cotton goods Woollen goods	52·0 16·0 6·6	71·4 26·6 10·4	75.6 20.6 9.3	38·2 11·8 4·9	85·8 18·3 5·2	83·9 9·2
Linen and jute Silk	2.4	2.6	2.7	1.8	1.8	4·1 1·2
Textiles	77.0	111-0	108-2	56.7	55.6	48.4
Iron	12·4 8·8 5·3 5·6	26·5 5·3 6·4 4·7	29·7 9·2 5·5 4·8	9·1 2·8 8·9 4·1	13·8 2·7 8·2 2·3	13·8 4·1 2·5 2·2
Hardware	27:1	42.9	49-2	19.9	21.5	22.1
Coal Sundries	3·3 28·5	5·6 40·1	8·4 57·3	2·4 21·0	2·8 20·1	8·8 25·7
Total	135-9	199.6	223.1	100-0	100.0	100.0

## D.—Customers for British Exports.

	Millions &			Aliquot Parts.		
	1860.	1870.	1882.	1860.	1870.	1882.
Colonies	44	52	85	32.1	25.9	35.1
United States	22	28	31	16.1	14-0	12.9
Germany	13	20	19	9.6	10.0	8.0
South America	12.	17	22	8.8	8.5	9.1
France	5	12	18	3.6	6.0	7.4
Turkey and Egypt .	7	16	10	5.1	8.0	4.0
Holland	6	11	'9	4.4	5.5	3.8
Russia	1 3	7	6	2.2	3.2	2.5
Belgium	2	4	8	1.4	2.0	3.8
Italy	: 4	5	7	2.8	2.5	8.0
Spain and Portugal.	4	5	; 6	2.8	2.5	2.5
Various	14	23	20	11.1	11.6	8.4
Total	136	200	241	1000	100.0	100-0

## 180

## EXPORTS.

## E.—Exports of France.

	Quan	tity (Mil	lions).	Value (Thousands £).				
	1861.	1869.	1880.	1861.	1869.	1880.		
Woollen goods .				7,550	10,600	14,800		
Silk do	•••	١	١	18,300	17,900	9,400		
Cotton do				2,300	2.800	3,200		
Wine, gallons .	41	67	55	7,800	10,500	9.800		
Spirits ,	34	6	61	2,000	2,300	8,200		
Sugar, lbs	118	273	339	1,700	3,800	4,300		
Grain, bushels .	4	13	15	1,400	2,800	2,500		
Fruit, lbs	75	62	68	600	1,100	1,000		
Cheese, &c	26	64	77	1.400	8,100	3,600		
Eggs	260	580	428	700	1,500	1,200		
Sundries	•••			58,300	66,600	85,700		
Total				97,050	123,000	188,700		

## F.—Exports of Germany (1880).

			Thousands : Omitted.			Thousands Omitted.
Silk goods			£10,300	Leather, &c.		£6,600
Woollen do.			8,600	Sugar .		5,500
Cotton do.			2,700	Machinery		2,200
Cattle .			5,500	Yarns .		4.800
Grain .	•	•	9,700	Sundries .		96,400

## G.—Exports of Russia.

	Quan	tity (Mil	lions):	Value (Thousands £).				
	1861.	1870.	1880.	1861.	1870.	1890.		
Grain, bushels .	55	120	138	8,500	20,300	22,800		
Flax, hemp, lbs.	259	533	540	3,000	8,900	7.800		
Linseed, lbs	440	810	806	1,500	3,300	8,700		
Tallow ,	90	48	16	1,500	800	230		
Sundries				5,600	9,500	18,070		
Total			1	20,100	42,800	47,600		

## H.-EXPORTS OF AUSTRIA.

	Quan	tity (Mil	lions).	Value (Thousands £).			
	1860.	į1870.	1880.	1860.	1870.	1880.	
Grain, bushels .	16	25	36	2,650	5,150	10,700	
Cattle				750	1,030	3,580	
Sugar, lbs		143	546		1,700	5,800	
Woollen goods .	6	9	10	1,600	1,700	2,440	
Linen goods .	8	12	12	960	1,500	1,100	
Timber, cubic ft.	35	57	88	1,650	2,300	4,480	
Sundries	***	111		11,390	26,120	38,500	
Total				19,000	39,500	66,600	

## I.—Exports of Italy.

	Quan	tity (Mil	lions).	Valu	Value (Thousands £).			
	1862.	1870.	1880.	1862,	1870.	1880.		
Silk, lbs	5	41	8	8,200	8,400	9,800		
Wine, gallons .	5	5	48	430	450	2,600		
Fruit, lbs	106	178	216	1,200	1,000	1,400		
Oil "	102	128	127	2,600	3,500	3,500		
Eggs	42	98	501	70	160	1.400		
Sulphur, cwts	3	31	6	1,200	1,050	1,300		
Sundries				9,400	15,640	24,100		
Total	7			23,100	30,200	44,100		

## K .- EXPORTS OF SPAIN.

	Quan	tity (Mil	lions).	Valu	Value (Thousands £).			
	1863.	1870.	1880.	1863.	1870.	1880.		
Wine, gallons .	26	33	134	3,480	5,050	9,600		
Fruit, lbs	83	140	278	650	1,400	1,700		
Oil "	44	13	29	960	250	470		
Copper, lbs	4	2	46	150	60	820		
Lead, cwts	1	1	2	900	700	1,800		
Mercury, lbs	1	3	2 21	150	400	250		
Sundries				5,310	7,840	7,260		
Total	G.1.		,.,	11,600	15,700	21,900		

## **EXPORTS**

## L-EXPORTS OF BELGIUM.

	Quan	tity (Mil	lions).	Value (Thousands &).			
	1860.	1870.	1880.	1860.	1870.	1880.	
Coal, tons	31	4	51	2,200	2,400	3,300	
Yarn, lbs	11	24	42	1,200	2,600	5,200	
Text. fabrics, lbs.	22	20	43	3,100	2,500	8,100	
Flax, lbs	38	51	62	1,020	2,020	2,700	
Sugar,,	1	83	134	20	910	1,800	
Iron, cwts	1	4	41	440	1,500	1,500	
Sundries			*	10,820	15,670	31,600	
Total				18,800	27,600	48,700	

## M.—Exports of Holland.

			Quan	tity (Mil	lions).	Valu	Value (Tnousands £).			
			1861.	1870.	1880.	1861.	1870.	1890.		
Coffee, lbs.		_	138	176	148	2,200	2,800	2,400		
Butter			39	48	79	1,100	1,400	2,300		
Cheese ,,			62	64	61	800	820	790		
Cattle						700	800	1.050		
Sugar, lbs.			139	206	146	2,100	3,000	2,100		
Flax ,			33	52	34	900	1,300	900		
Rice ,			81	40	75	300	450	800		
Iron					l	600	1,000	5,400		
Sundries .	•		•••			12,340	20,230	36,360		
Total .						21,040	31,800	52,100		

## N.—Exports of United States.

	A	nnual A	verage V	alue in £	(Thousa	nds Omitt	ed).
	1821-30.	1831-40.	1841-50.	1851-60.	1861-70.	1871-80.	1881.
Cotton	5,300	11,050	11,550	25,600	16,800	37,800	51,600
Grain	1,200	1,060	3,120	6,100	9,400	27,100	55,100
Tobacco	1.150	1.560	1.670	3,100	3,900	5,100	4,300
Meat	300	420	1,040	1,800	3,300	12,600	21,800
Butter.cheese	40	40	210	300	1,550		4,800
Petroleum .	***			240	2,450		
Lumber	410	590	770	1,600	2,050		3,800
Manufactures	220	450	1.030	2,200	1.800		5,800
Sundries	2,690	3,030	3,710	7,500	6,200	10,100	28,400
Total	11,310	18,200	23,100	48,200	47,450	111,200	184,000

The amounts are calculated in gold throughout. Lard is included with meat.

## EXPORTS.

## O.—Exports of Australia.

		ı	Quant	Hty (Mil	lions).	Value (Thousands &).			
			1860.	1870.	1890.	1860.	1870.	1880.	
Wool, lbs.	•	•	69	186	374	4,800	9,100	20,100	
Gold, oz			22	2	1	11,100	8,000	4,100	
Sandries .	•	•		•••		6,000	11,300	24,700	
Total .						21,900	28,400	48,900	

	Valu	e (Thousan	Per Inhabitant, &			
	1860.	1870.	1882	1860.	1870.	1882.
N. South Wales	5,100	5,800	16,700	15	12	22
Victoria	12,900	12,500	16,200	24	17	18
New Zealand .	600	4,800	6,700	6	19	13
South Australia	1,800	2,400	5,400	14	13	20
Queensland	500	2,000	3,300	15	17	15
Tasmania	900	700	1,500	10	7	14
West Australia	100	200	500	6	8	17
Total	21,900	28,400	50,300	17	15	18

Gold is included as merchandise in the exports of Australia, but not in other countries.

## P.—Exports of Canada.

			Value in £ (Tho	usands Omitted).	Relative
			1872.	1881.	Increase, per Cent.
Grain			2,400	5,500	125
Meat			650	1,550	145
Fish			800	1,300	62
Butter and ch	eese .		1,130	2,020	80
Lumber .			4,400	4,700	7
Sundries .	•	•	7,820	5,430	•••
Total .			17,200	20,500	20



## 184

## EXPORTS.

## Q.—Exports of China.

				Quantity	(Millions).	Value (Tnousands £).		
				1871.	1880.	1871.	1880.	
Tea, lbs.		•	•	223	279	12,200	10,800	
Silk "		•	•	71	101	7,600	6,800	
Sundries	•	•	•			1,300	5,800	
Total						21,100	23,400	

## R-EXPORTS OF EGYPT (1880).

		(T	Value housands £).		-	•	<b>(T</b> 1	Value nousands £)
Cotton .			7,770	Grain		•		2,100
Cotton-seed			1,610	Sundries				2,040
	Total	1			£13	590		

## S.—Exports of India.

	Quant	tity (Mill	ions).	Valu	e (Thousan	ds £).
	1861.	1871.	1881.	1861.	1871.	1881.
Cotton, lbs	370	578	509	7,300	19,500	13,200
Opium ,,	8 }	12	121	10,200	10,800	13,600
Rice, cwts	15	16	27	3,000	4,200	9,100
Seeds ,	4	7	10	1.800	3,500	6,400
Jute ,,	1	4	6	400	2,600	3,900
Silk, lbs	2	2	11	1,050	1,400	600
Tea ,	1	13	47	90	1.100	3,100
Coffee ,,	19	34	41	300	800	1,600
Wheat, bushels		07	15		100	3,300
Sundries		<b>-</b>		8,860	11,300	19,700
Total	!	·		33,000	55,300	74.500

## T.—EXPORTS OF BRAZIL.

			Quan	tit <b>y (M</b> ill	lions).	Value (Thousands £).			
			1860.	1870.	1881.	1860.	1870.	7881.	
Coffee, lbs.			225	343	724	3,500	9,100	16,100	
Sugar ,,			172	339	345	1,400	2,400	2,200	
Cotton ,,			22	91	40	600	3,200	1,010	
Tobacco ,			10	31	30	250	740	720	
Sundries .	•			•••		700	2,600	3,370	
Total .		.		· · · ·		6,450	18,040	23,400	

## U.—Exports of Argentine Republic.

	Quan	tity (Mill	lions).	Value (Thousands £).			
	1860.	1870.	1880.	1860.	1870.	1880.	
Wool, lbs	42	160	215	1,400	2,300	5,400	
Hides	2	21	3	1,700	1,900	2,100	
Sheep skins, lbs.	10	61	66	200	1,000	1,100	
Beef, lbs	42	65	58	400	600	600	
Tallow,,	28	46	25	500	700	400	
Grain, bushels .			3	l		600	
Sundries		١	<b></b>	300	1,400	1,500	
Total			<b></b>	4,500	7,900	11,700	

For other countries, see Commerce.

## V.—Exports of Bullion.

	Millions &.											
	1861-70-			1871-80.			Annual Average.					
·	Gold.	Silver.	Total.	Gold.	Silver.	Total.	1861-70.	1871-80				
Great Britain .	112 113	91 22	203 135	172	119 73	291 147	20 14	29 15				
United States. France	119	78	197	90	48	138	20	14				
Australia SpanAmerica	108	74	108 79	76	68	76 72	8	8 7				
Various	55	179	234	88	94	182	23	18				
Total	512	444	956	504	402	906	96	91				

## $\mathbf{F}$

## PACTORIES (TEXTILE).

## A .- SUMMARY FOR THE UNITED KINGDOM.

			1850.	1860.	1870.	1880.
Factories			4,601	6,378	6, 258	7,105
Spindles, millions			31	36	42	47
Looms, thousands			302	499	606	725
Operatives			596	776	907	976
Steam (horse-power,	tho	usands)	108	375	473	570

# FACTORIES.

# B. - COTTON AND WOOLLEN FACTORIES.

		Cotton.		Woollen,				
	1850.	1870.	1880.	1850.	1870.	1>80.		
Factories Spindles, millions	1,933 2,483 21 38		2,674 40	1,998 21	2,579	2,410 51		
Looms, thousands Operatives ,,	250 331	440 449	513 487	42 154	113 239	143 265		

# C.—FACTORIES IN 1880.

	Number.	Million Spindles.	Looms (Thousands).	Operatives (Thousands)
Cotton	2,674	39.6	513	487
Woollen	2,410	5.4	143	265
Linen, jute	516	1.5	52	141
Silk, &c	1,505	•8	17	83
Total	7,105	47.3	725	976
England	6,189	44.4	637	778
Scotland	675	2.0	67	136
Ireland	241	.9	23	62
United Kingdom	7,105	47.3	725	976

# D.—Steam-Power.

# Horse-Power (Thousands).

	Cotton .			1850. 71	1860. 242	1870. 801	1880. 356
•	Woollen	:	Ċ	23	78	101	122
	Linen, jute			11	44	52	73
	Silk, &c.	•	•	3	11	19	19
	Total			108	375	473	570

# E.—Power Used in American Factories (1880).

04-4	Horse-Power				
States.	Water.	Water. Steam. Total			
New England .	. 78	137	215	54	
Middle		298	356	31	
Southern	. 5	45	50	3	
Western	. 18	229	247	14	
Pacific	. 1	13	14	13	
Total	. 160	722	882	17	

# F.—FACTORY STEAM-POWER OF NATIONS (1880).

			Horse-Power (Thousands Omitted).	Horse-Power per 100 Iuhabitauts.	Ratio of World's Total,
Great Britain .			2,200	6.2	29 · 8
France			906	2.4	12.3
Germany .			1,821	8-0	16.6
Belgium			382	7.0	5.6
Russia			237	0.8	3.2
Austria			157	0.4	2.1
Other countries	•		258	0.4	3.4
Europe .			5,456	1:6	73.0
United States.	:	:	1,987	8.8	27·0
Total .			7,448	2·1	100.0

The above includes not only factories, but also mines.

# **FAILURES.**—See Bankruptcy.

**FAIRS.**—In that of Leipzig the annual average of sales is millions sterling, comprising 20,000 tons of merchandise, of which 8000 tons are books.

The fair of Nijni-Novgorod is the greatest in the world, he returns showing:—

Year. 1841			Goods Offered. £8,000,000	Goods Sold. £7,000,000
1857			13,000,000	12,000,000
1876	_		80,000,000	28,000,000

This fair is attended by 150,000 dealers from all parts of the world, and the goods sold in 1876 were:—

Cottons, linens, &c.			£8,000,000
Furs, leather, &c.			7,000,000
Ural metals .			7,000,000
Flour, fish, brandy			3,000,000
Tea and luxuries			3,000,000
			<del></del>

Total . . £28,000,000

# PAMILIES.

#### A.—LARGE FAMILIES.

Parent.	Place.	Number of Children.	Date.	
Mme. Frescobaldi	Florence		52	1570
David Wilson .	Indiana		47	1850
Mr. Greenhill .	Abbots Langley, H	[erts	39	•••
Rev. Dr. Erskine	Scotland		33	1760

Madame Frescobaldi had never less than 3 children at a birth.

Fedor Vassileff, of Moscow, 1782, had 83 children living when pensioned by the Czar: he had 69 children by his first wife, at 27 births; and, after her death, had 18 more by his second, in 8 births.

Lucas Saez returned to Spain in June 1883 from the United States with 37 children, 79 grandchildren, and 81 great-grandchildren—in all, 107 males and 90 females; his eldest son being aged 70.

	-Average of Children	TO A	MARRIAGE
--	----------------------	------	----------

England			4.08	Russia	4.83	Spain .			4 65
Scotland			4.46	Austria					
Ireland .			5.20	Hungary .		Holland			
France .				Switzerland					
Germany	•	•	4.10	Italy	4.24	Sweden .	•	•	4.12

#### See Births.

# FAMINES.—Walford mentions 160 since the 11th century, viz.:—

England Ireland	١.	:	:	57 34	Scotland   France .	:	•	12 10		Germany . Italy, &c.	•	:	11 36
The	wo	rst	in	mo	dern times	ha	ve	beer	a :				

ine worst in modern times have been:—

Country.			Date.	No. of Victims.
France			1770	48,000
Ireland			1847	1,029,000
India	•		1866	1,450,000

#### FASTING.

1684. Four men taken alive out of a mine, in England, after 24 days without food.

1880. Dr. Tanner, New York, lived on water 40 days, losing 36 lbs. weight.

FEVER.—The predisposition to fever varies with age in the following degrees:—

Age.		Degree.	Age.		1	egree.
Under 5		10	<b>25</b> –30			102
5-10 .		94	30-40			44
10-15 .		182	40-50	•		16
15-20 .		269	50-55			6
<b>2</b> 0-25 .		197	Over 55			2

Napoleon lost 51,000 soldiers by fever in his campaign of 1812, and the French army 17,000 men in the Crimea, 1855. Typhoid fever attacks 27,000 persons yearly in England, of whom 4000 (that is, 15 per cent.) die. See Diseases.

FIBRE.

# A.—Production in 19th Century.

_	Millions of Lbs.										
Year.	Cotton.	Wool.	Flax.	Hemp.	Jute.	Total					
1810	214	442	560	470		1,686					
1820	302	476	610	490		1,878					
1830	636	545	730	540	10	2,461					
1840	1,192	640	1,080	580	20	3,512					
1850	1,260	856	1,320	650	55	4,141					
1860	2,391	1,041	1,190	770	102	5,494					
1870	2,474	1,453	1,280	884	456	6,547					
1880	4,039	1,650	1,140	955	628	8,412					

# B.—Consumption in United Kingdom.

	l.	Mi	Ratio to			
Year.	Cotton.	Wool.	Flax.	Hemp and Jute.	Total.	World's Crop ler Cent.
1810	114	83	60	107	364	23
1820	123	85	87	95	380	20
1830	246	110	138	59	553	21
1840	448	129	210	67	854	24
1850	565	158	249	164	1,136	27
1860	1,140	224	228	164	1,756	33
1870	1,101	309	291	484	2,185	83
1880	1,404	338	227	569	2,538	80

# C.—CONSUMPTION IN ALL COUNTRIES (1880).

		Million	as of Lbs.		Ī.,	Lbs.
	Cotton.	Wool	Flax, &c.	Total.	Ratio.	per Inhab.
U. Kingdom .	1,404	338	796	2,538	33.8	71
France	340	336	286	962	12.8	26
Germany	390	190	217	797	10.7	18
Russia	140	170	230	540	7.2	6
Austria	150	80	372	602	8.0	16
Belgium, &c	330	216	230	776	10.4	15
Europe	2,754	1,330	2,131	6,215	82.9	20
United States	910	320	100	1,330	17.1	25
Total	3,664	1,650	2,231	7,545	100.0	21

The above is irrespective of yarn (q.v.)
The average production of fibre per 100 acres is—cotton
15, flax 30, hemp 35, and jute 40 tons

#### FINANCES.

#### A.—NATIONAL GOVERNMENT EXPENDITURE.

	1		Millions	Sterling	•	
	1830.	1840.	1850.	1860.	1870.	1881.
United Kingdom .	55	52	55	73	70	83
France	41	57	60	83	90	121
Germany	16	22	28	32	51	90
Russia	23	30	42	56	69	80
Austria	18	28	39	45	59	75
Italy	12	19	81	37	41	56
Spain	9	11	14	21	33	83
Portugal	2	3	4	4	5	8
Holland	8	5	7	7	8	10
Belgium	8		6	6	7	lii
Denmark.	2	2	2	2	3	2
Sweden and Norway	2 2 1	5 2 2 1	2	8	5	
Greece	l ī	l ī	Ιī	i	2	7
Roumania	I	ļ	l -	l	_	5
Turkey	4	6	8	13	21	13
Europe	191	243	299	383	464	598
United States	3	5	7	12	58	. 54
Mexico	3	3	4	6	5	4
S. American Republica	2	2	3	l ă	8	111
Brazil	2	8	5	6	8	îî
Canada	Ιĩ	8	2	8	1 4	6
Australia	2 2 1 1	l i	١ī	8	12	20
Cape Colony	î	l î	l i	lĭ	2	5
Egypt	2	2	3	5	14	8
India	22	25	28	52	55	76
7	2	1 74	5	6	8	lii
Japan						ii
The World	230	290	358	486	638	815

In the above table the expenditure for Germany includes the budgets of Prussia, Bavaria, Saxony, and the minor States, as in Table K. It does not include State expenditure in the United States, nor local taxes in any country. The expenditure of Europe has exactly doubled since 1850,

The expenditure of Europe has exactly doubled since 1850, whereas that of the United Kingdom has risen only 50 per cent. The British expenditure in 1850 was nearly 16 per cent of the total for all nations: at present it is only 10 per cent. French expenditure has risen about 50 per cent since 1860, while that of Germany is increased 200 per cent, and the United States 350 per cent.

B .- NATIONAL EXPENDITURE TO POPULATION.

		8hi	llings pe	r Inhabi	tant.	
	1830.	1840.	1850.	1860.	1870.	1861.
United Kingdom .	46	40	40	50	45	47
France	25	34	35	46	50	68
Germany	12	15	17	18	25	40
Russia	9	10	13	15	19	20
Austria	15	20	26	28	34	40
Italy	15	20	31	88	84	40
Spain	16	18	20	27	40	40
Portugal	lii	17	20	20	24	36
Holland	24	34	46	44	46	50
Belgium	18	25	27	25	28	42
Denmark.	86	35	88	81	34	24
Sweden and Norway	10	10	10	12	17	22
Greece	20	20	20	16	34	45
Dammania	""					19
(M. )	7	iö	13	18	27	60
73	16	20	22	28	81	89
TT-14-3 GA-4	14	6	7	8	30	21
Brazil	7	9	12	15	18	23
C1-	10	14	16	18	20	27
Australia	40	33	30	125	120	141
		30	28	49	27	90
Cape Colony		5	5	7	7	8
Java	7	10	10	10	10	12
	12	10	27	40	56	
Egypt						30
Argentine Republic.	10	10	10	15	34	40
Chili	7	7	15	18	21	35
The World	11	18	14	18	22	25

If we take the year 1840 for point of departure, we find the relative expenditure per inhabitant in the principal countries has risen as follows:—

	1840.	1850.	1860.	1870.	1861.
United Kingdom	100	100	125	113	118
France	100	103	135	147	200
Germany	100	113	120	167	267
Russia	100	130	150	190	200
Austria	100	130	140	170	200
Italy	100	155	190	170	200
Spain	100	121	150	242	242
United States .	100	117	133	500	351
Australia	100	90	375	<b>3</b> 60	424
Canada	100	114	128	142	192

# FINANCES.

# C.—Expenditure and Revenue Compared.

		¥	Iillions &	per Annu	n.		
	E	xpenditur	ъ.	Revenue.			
	1830-49.	1850 69.	1870-82	1830-49.	1850 69.	1870-82.	
U. Kingdom .	54	71	77	9 55	69	80	
France	55	92	141	53	78	105	
Germany	22	42	80	22	37	73	
Russia	32	50	82	29	39	60	
Austria	29	49	68	28	38	61	
Italy	21	48	66	20	31	54	
Spain	14	31	39	11	23	30	
Portugal	4	6	9	3	4	6	
Holland	5	7	9	5 5	9	9	
Belgium	6	7	12	5	6	9	
Scandinavia .	4	6	10	4	6	9	
Turkey	6	15	18	6	10	16	
Europe	252	424	611	241	350	512	
United States .	6	51	51	5	28	64	
Canada	1	4	6	1	3	5	
Australia	1	7	20	1	5	15	
Spanish America	12	20	23	9	16	15	
Egypt	3	8	14	3	6	8	
India	26	48	59	25	45	55	
The World .	301	562	784	285	453	674	

# Result for 53 Years, in Millions £.

	E	x penditure.	Revenue.	Surplus Expenditure.	Surplus Revenue.
United Kingdom		3,501	3,520	·	19
France		4,773	8,985	788	•••
Germany		2,320	2,129	191	•••
Russia		2,706	2,140	566	
Austria		2,444	2,113	331	
Italy		2,238	1,722	516	
Spain and Portugal		1,724	1,288	436	•••
Holland and Belgiu	m	773	734	39	
Scandinavia .		330	317	13	
Turkey		654	528	126	
United States .		1,803	1,492	311	
Canada		178	145	33	•••
India		2,247	2.115	132	
Australia		420	315	105	•••
Egypt		402	284	118	
Spanish America		939	695	244	•••
					-
The World .	•	27,452	23,522	3,930	•••

192

# D.—REVENUES SINCE 1871.

			Millions &.		
	Decad	e Average,	from 1871 t	o 188 <b>0.</b>	Year 1881,
	Customs.	Property-	Various.	Total	Total Revenue.
United Kingdom .	20.1	6.6	50.8	77:3	84.0
France	10.3	8.7	85.5	104.2	114-2
Germany	8.6	10.5	53.5	72.6	90.2
Russia	8.5	10.3	41.5	60.3	73.7
Austria	2.6	9.4	48.5	60.5	68.4
Italy	5.0	13.0	35.4	53.4	54-2
Spain	4.4	9.6	15.8	29.8	81.6
Portugal	1.8	0.8	8.2	5.8	7.0
Holland	0.4	1.8	6.5	8.7	8.4
Belgium	0.8	1.5	7.0	9.3	11.4
Denmark	1.0	0.5	1.2	2.7	2.7
Sweden and Norway	2.4	0.2	4.0	6.9	7.0
Europe	65.9	73 2	352:7	491.8	552.8
United States	26.0		36.2	62.2	75.6
Canada	2.7		2.2	4.9	5.4
Australia	4.1		10.1	14.2	20.6
Brazil	6.7	0.4	2.2	9.3	11.1
Egypt	0.8	5.0	2.3	8.1	8.4
India	2.2	21.1	31.8	55.1	68.5
The World	108.4	99.7	437.5	615.6	742.4

# E-Revenues of the Three Kingdoms (1881).

		T	housands £	Shillings per Inhabitant.				
		England.	Scotland.	Ireland.	England.	Scotland.	Ireland	
Customs .	•	15,319	1.945	1,920	12	11	7	
Excise		16,626	4,524	4,068	13	25	16	
Stamps .		9,373	1,224	710.	7	7	3	
Taxes		10,360	1,013	471	8	6	2	
Post Office		6,630	840	830	5	5	3	
Sundries .	•	6,538	830	820	5	5	3	
Total .		64,846	10,376	8,819	50	59	34	

# FINANCES.

# F.-Increase of German Revenues.

				Millie	ons &.	Shillings per Inhe		
				1867.	1882,	1867.	1882.	
Prussia .		•		25.3	89 0	21	29	
Bavaria .				5.9	11.1	25	42	
Saxony .				2.2	3-2	18	21	
Wurtemburg		•	•	1.3	2.5	15	25	
Baden .				1.7	2.1	24	28	
Alsass .					2.4	<b></b>	80	
Hamburg .				0.7	1.4	47	61	
Duchies, &c.	•	•	•	8.4	4.8	25	24	
Total				40.5	66.2	19	29	
Imperial .	•	•	•		24.8		11	
Total				40 5	91.3	19	40	

# G.—Expenditure in 1881-82.

	}	Million	e &	
	Government.	Interest on Debt.	Army and Navy.	Total
United Kingdom	25.6	29.6	27.9	83.1
France	42.1	49.4	29 <b>·6</b>	121.1
Germany	57.2	10.7	22.5	90.4
Russia	26.3	24.2	29.5	80-0
Austria	38.8	23.7	12.6	75.1
Italy	22.1	24.5	10.4	57-0
Spain	14.2	12.4	6.3	32-9
Portugal	3.7	2.9	1.2	7.8
Holland	5.1	2.3	2.6	10-0
Belgium	6-2	8.6	1.8	111
Denmark	10	0.5	0.8	2.4
Sweden and Norway.	4.2	1.0	1.8	7-0
Europe	246.5	184.8	147.1	578:4
United States	26.3	18.4	9.4	54.1
Canada	8.4	1.8	0-2	5.4
Australia	13.9	4.7	0-2	18.8
Brazil	4.5	3.7	2-9	111
Egypt	4.4	8.2	0.5	8.4
India	49-2	5.7	21.7	76 6
Japan	4.6	4.3	2-2	11.1
Argentine Republic .	2-2	20	1.4	54
The World	355.0	228-9	185-6	769:5

Interest on debt includes Sinking Fund.

# FINANCES.

# H.—RATIOS OF EXPENDITURE (1881-82).

	8711	lings per	r Inhabit	Aliquot Parts of Budget.			
	Govern- ment.	Debt.	Army.	Total.	Govern- ment.	Debt.	Army and Navy.
United Kingdom	14	17	16	47	80.7	35.7	33.6
France	23	28	17	68	34.8	40.8	24.4
Germany	25	5	10	40	63.4	11.8	24.8
Russia	• 7	6	.8	21	32.8	80.2	87.0
Austria	20	18	.8 7	40	51.6	81.7	16.7
Italy	16	17	7	40	88.88	48.4	17.8
Spain	17	15	8	40	43.8	87.2	19.0
Portugal	17	14	6	87	48.8	36.2	15-0
Holland	25	12	13	50	51.0	23.0	26.0
Belgium	22	13	7	42	58.1	81.3	15.6
Denmark	11	5	9	25	44.0	20.0	36.0
Sweden and Nor.	13	3	6	22	60.0	14.3	25.7
Europe	16	13	10	39	43.1	81.6	25.3
United States .	11	7	4	22	49.1	<b>3</b> 3·7	17.2
Canada	17	9	1	27	63.1	33.5	8.7
Australia	105	85	1	141	73.9	25.1	1.0
Brazil	9	8	6	23	40.0	33·6	26.4
Egypt	16	12	2	80	52.8	41.2	6.0
India	5	1	2	8	64.0	7.5	28.5
Japan	8	3	1	7	40.9	39.1	20.0
Argentine Repub.		15	12	44	89.8	34.2	26.0
The World	11	8	6	25	46.8	29.6	24.1

The countries in which debt absorbs too much of revenue are the following:—

Debt Government . Army and navy	Italy.	Egypt.	France.	Japan.	8min.	Portugal,
	43·4	41.2	40·8	39·1	37:2	36-2
	38·8	52.8	34·8	40·9	43:8	48-8
	17·8	6.0	24·4	20·0	19:0	15-0
Total	100.0	100.0	1000	100.0	100.0	100·0

The countries wherein military expenditure (army and navy) constitutes a high ratio are the following:—

Army and navy Government . Debt	Russia 87 0 32 8 80 2	Denmark. 36·0 44·0 20 0	U. Kingdom. 33.6 30.7 35.7	India, 28:5 64:0 7:5	Brazil. 26:4 40:0 83:6	Holland, 26:0 51:0 23:0
Total	100-0	100.0	100.0	100.0	100.0	100:0



196

#### FINANCES.

# I.—British Revenues in 40 Years.

		Millions &.						
	1842-51.	1852-61.	1869-71.	1872-81.	40 years			
Customs	226	237	221	199	883			
Excise	151	181	204	268	804			
Stamps	71	78	94	110	853			
Income-tax	55	102	78	71	806			
Post Office	18	80	45	74	167			
Sundries	46	50	69 .	77	242			
Total	567	678	711	799	2,755			

	81	Shillings per Inhabitant per Annum.							
	1842-51.	1852-61.	1862-71.	1872-81.	40 years.				
Customs	16.7	16.9	14.7	12-2	14.7				
Excise	11-2	12.8	13.5	16-2	13.4				
Stamps	5-2	5.5	6-2	6.7	5-9				
Income-tax	4.1	7.3	5.2	4.3	5.1				
Post Office	1.3	2.2	8-0	4.5	2.7				
Sundries	3.2	3.2	4.5	47	40				
Total	42.0	48-2	47:1	48.6	45.8				

	Ī	Aliquot Parts.							
	1842-51.	1852-61.	1862-71.	1872-81.	40 years.				
Customs	39.8	34.8	31.1	25.0	32·1				
Excise	26.5	26.7	28.7	33.5	29-2				
Stamps	12.6	11.5	13.2	13.7	128				
Income-tax	9.8	15.1	10-9	8-9	11.1				
Post Office	3.2	4.4	6.3	9-2	6.1				
Sundries	8.1	7.5	9⋅8	9.7	8-7				
Total	100.0	100-0	100-0	100-0	100-0				

The financial legislation of the last 30 years has had for object to lighten the Customs dues, which press unduly on the working classes: the percentage of pauperism in England declines steadily as the Customs dues are reduced. The increase of Post Office revenue is another favourable sign, this item now representing more than 10 per cent. of the total revenue.



#### FINANCES.

K .- British Expenditure in 40 Years.

					Mill	ions £.	
				Government.	Debt.	Army and Navy.	Total
1842-51				102	287	160	549
1852-61				186	285	288	709
1862-71				164	265	268	692
1872-81		•	•	283	281	280	794
40 years	١.			635	1,118	991	2,744

	Shillin	gs per Inh	abitant per Ann	um.
1852-61 1862-71 1872-81	Government.	Debt.	Army and Navy.	Total
1842-51	7.5	21.3	11.9	40.7
1852-61	. 97	20.3	20.5	50.2
1862-71	.   10.9	17.7	17.5	46.1
1872-81	. 14.2	17.0	16.9	48.1
40 years	. 10.5	18.5	16.7	45.7

	Aliquot Parts.							
	1842-51.	1852-61.	1862-71.	1872-81.	40 years.			
Government .	18.6	19:2	23.5	29:3	23·1			
Debt	52.3	40-2	38.4	35.4	407			
Army and navy	29.1	40.6	38.1	35.3	86.2			
Total	100.0	1000	100.0	100.0	100.0			

Comparing the expenditure with population, we find the cost of administration or government has risen from 7s. 6d. per head in the first decade to 14s. 3d. in the fourth, that of the army and navy from 12 to 17 shillings, while the burden of debt has declined from 21s. 4d. to 17 shillings.

Comparing expenditure with national earnings, we find:

#### Annual Average, Millions &.

				Nat.	Earnings.	Expenditure.	Ratio.
1842-51			•	•	610	55	9.0
1852-61					715	71	10.0
1862-71					890	69	7.8
1872–81					1,110	79	7.2
40 years	aver	age			830	69	8.3

197



198

FINANCES.

# L.—Finances of Cities (1880-81).

		Thousar	nds £.	£ per in	habitant.
		Annual Expenditure.	Debt.	Expendi- ture.	Debt.
Antwerp .		876	•••	2.1	•••
Berlin .		2,200	5,610	2.0	5.1
Birmingham		1,610	6,110	4.0	15.0
Boston .			6,200	1 1	16.5
Bradford .		1,100	8,400	6.0	19.0
Breslau .		361	1,270	1.5	5.3
Brighton .		210	700	1.6	5.5
Bristol .		405	600	2.0	2.9
Brooklyn.	: :		7.900		14.9
Bucharest	•	337	570	1.5	1.8
Buda-Pesth	: :	672	1,280	2.2	4.3
Christiania	-	250	345	3.3	4.5
Copenhagen	• •	325	850	1.6	4.1
Florence .	• •	950	5,540	57	33.5
Frankfort		422	1,460	3.5	12·1
Genoa .	• •	466	1,600	2.6	9.0
				4.2	11.3
Leeds	• •	1,800	3,500	2.3	5.5
Leipsig .		312	740		
Liège .		809	1,500	2.7	13.5
Liverpool		3,200	21,600	5.9	39.6
London .		11,300	20,600	2.9	5.3
Manchester		1,900	6,200	3.3	10-9
Milan .		•••	3,050		9.3
Munich .		395	1,500	1.8	7.0
Naples .			4,860		8.8
Newcastle		400	700	2.7	4.8
New York		\	23,100	l l	19.1
Palermo .		320	540	1.3	2.2
Paris .		10,440	85,300	4.7	34.2
Philadelphia			8,400		4.1
Rome .		820	2,340	2.7	7.8
San Francisco	•	970	750	1 41 1	3-2
St. Louis.		1	4,800	1	140
Sheffield .	• •	410	500	i¼	1.8
Stockholm		360	480	2.3	30
Stuttgart.		120	400	1 11	3.7
Trieste .		373	500	3.7	4.9
		520	510	2.7	2.7
Turin . Venice .		182	430	1.4	3·3
				1	3·3 7·8
Vienna .		2,700	8,470	2.5	18

The debts of cities in the United States in 1881 reached an aggregate of 115 millions sterling for 9,160,000 inhabitants, or £12, 10s. per head. See Debts.

# PIRE.

# A .- VALUE OF PROPERTY DESTROYED YEARLY.

			1	Th <b>ousands &amp;</b> .	Shillings per Inha- bitant.	Ratio of Insured Property per Cent
United Kin	gdon	<b>1</b>		9,100	5.1	46
France .	•			8,100	1.7	75
Germany .				6,200	2.7	74
Russia .				14,000	3.4	9
Austria .				3,500	2.0	•••
Italy? .				1,000	0.7	•••
Spain? .				<b>500</b>	0.8	•••
Belgium .				520	1.9	43
Holland .				400	2.0	•••
Scandinavia				1,300	3.2	•••
						_
Europe				39,620	3.1	•••
United Stat	es			16,800	7.0	55
Canada .				2,100	9.2	44
The W	orld			58,520	4.2	

# B.—Fires in Cities, Annual Average.

		N	umber of Fires.	Number per 100,000 Inhabitants.	Loss (Thousands £).	Per Inhabitant, Pence.
London			1,991	49	1,100	66
Paris .				•••	270	34
New York			1,783	144	780	150
Manchester			328	59	120	55
San Francis	ю		•••	•••	112	122
Philadelphia	B.		655	76	460	130
Chicago			490	98	360	180
Boston			389	117	130	95
Baltimore			172	52	70	55
Cincinnati			213	85	144	144
St. Louis			197	49	160	98

# C .- INCREASE OF LONDON FIRES.

Years.			Annual Avera	ge.
		Number of Fires.	Houses to	Inhabitante
1840-49		768	362	2,731
1850-59		977	331	2,570
1860-69		1,430	28 <b>8</b>	2,390
1870-80		1,795	264	2,150

Fires on Saturday are 5 per cent. more numerous than on my other day in London; but in Paris Friday has 20 per zent. over the average.

#### D.-FIRES IN FRANCE.

#### Annual Average.

Years.		Number of Fires.	Houses to	Inhabitants to a Fire.
1845-50		8,260	878	4,120
1851-60		10,556	715	3,435
1861-70		13,865	562	2,720

#### E.—DEATHS BY FIRE.

#### PER MILLION INHABITANTS PER ANNUM.

Munich			•	4	Naples				41
Glasgow				17	Hanover			•	57
Berlin				20	Cologne				71
Paris	•	•		24	London	•	•	•	83

The loss of life in England and Wales from fire averages 1490 persons yearly, of whom 42 per cent. are males and 58 per cent. females. The London firemen save 110 lives yearly.

#### F.—HISTORICAL FIRES.

Year.		Place.		Loss.
1570.		Moscow .		200,000 victims.
1666.		London .		13,200 houses.
1812.		Moscow .		15,500 ,,
1824 .		Cairo .		4,000 victims.
1831.		Constantinople	е	18,000 houses.
1835 .		New York		£6,000,000.
1842.		Hamburg		£7,200,000.
1851.		San Francisco		2,500 blocks.
1871 .		Chicago .		£33,000,000.
1872.		Boston .		£15,000,000.

#### Cost of Brigade, Pence per Inhab. Firemen per 100,000 Inhabitanta, Fire-Engines. Cost of Firemen. Brigade. London . . . Paris . . . . £80,000 13 38 536 5 203 1,500 98,000 68 11 St. Petersburg 1,150 37 127 • • • Hamburg . 53 790 305 New York . 250,000 55 38 690 48 103,000 Philadelphia . 27 404 49 29 Chicago . . 27 94,000 200 40 48 26 110,000 79 Boston . 472 138 Cincinnati . 155 62,000 62 18 64 40,000 St. Louis . 17 100 26 24 Baltimore . . 18 140 40,000 43 80 San Francisco 200 82 14 • • • ... Berlin . . . 50 1,090 96

98

475

Lyons . . .

48

G.—Fire-Brigades.

The London fire-brigade uses 17 million gallons water yearly, that is, 4½ gallons per inhabitant, or 8500 gallons for each fire. The New York brigade consumes 32 million gallons, that is, 25 gallons per inhabitant, or 18,000 gallons per fire.

#### H.—Cost of Brigade to Number of Fires.

London	£40	Philadelphia. £153	Baltimore .	£230
Sydney	88	Chicago 188 St. Louis 201	Boston	280
New York .	138	St. Louis 201	Cincinnati .	295

#### PIRE-DAMP.

Great Britain	Period. 1871–80	Explosions, 424	Deaths. 2,685	Per Annum. 268
Belgium .	1848-78	194	967	32

In Great Britain during 10 years ending 1880, the deaths from fire-damp explosions were nearly one-fourth of the total in mining accidents, viz.:—

Fire-damp Roof falling Various	in		:	•	Number. 2,685 4,508 4,156	268 451 416
Acciden	ıtal	deaths			11,349	1,135

See Mining.

FIREWOOD.—The average yield, per acre of forest, is as follows:—

Age of Trees		Firewood, Cubic Feet.	Age of Trees Years	١,		Firewood, Cubic Feet.	Age of Trees, Years,		Firewood, Cubic Feet.
10		700	50			6,200	120.		11,400
15		1,100	60			7,500	140.		12,400
20		1,800	70			8,300	150.		12,800
25		2,600	80			9,200	200.		13,400
30		8,300	90			9,700	250.		12,000
40		4,900	100			10,200	800.		11,000

Firewood is usually measured and sold by the "cord," which contains 125 cubic feet, or  $2\frac{1}{2}$  tons. Europe consumes 126 million tons of firewood yearly, and the United States  $28\frac{1}{2}$  million tons: the ordinary value is 5 shillings per ton. The lowest consumption is in England and Belgium, about 2 cubic feet per annum per inhabitant; the highest in Norway, Russia, and Canada, almost 40 feet per inhabitant. See Timber, Forest.

#### FISHERIES.

# A.—FISHERY OF THE WORLD

	Vessels.	Men (Thou- sands).	Thousand Tons Fish.	Value (Thou- sands).	Per Fisher- man.	Cwts of Fish per Man.
United Kingdom	34,900	118	380	£3,550	£32	68
France	21,900	85	130	<b>8,4</b> 80	40	31
Germany	8,100	17	40	400	24	48
Russia	18,500	68	220	2,200	33	62
Austria	2,800	7	15	150	22	41
Italy	18,200	61	100	1,000	16	34
Spain	10,200	38	50	500	13	27
Norway	16,600	113	115	1,660	15	21
Holland	2,000	8	20	200	25	50
Europe	128,200	510	1,070	£13,140	£26	42
United States .	6,600	52	140	950	19	5 <b>5</b>
Canada	11,200	53	260	2,450	48	98
The World .	146,000	615	1,470	£16,540	£27	48

		B.—	-British	FISHERIES.	
			Vessels.	Men.	Barrels Herrings
English			14,420	44,200	845,000
Scotch .			14,650	47,100	1,580,000
Irish .	•	•	5,830	21,300	210,000
Total			34,900	112,600	2,635,000

The above vessels take other fish besides herrings, but the latter form 70 per cent. of the total value of our sea-fishing. Including fresh-water fish, the annual value is nearly £5,000,000, viz.:—

Kind.				Tons.	Value.
Salmon .				8,600	£380,000
Cod .				13,000	140,000
Whale .		•			700,000
Herrings				300,000	2,400,000
Pilchards		•		3,000	30,000
Lobsters, &c.	•	:			900,000
Total					£4.600.000

The take of salmon is 60 per cent. Scotch, 30 per cent. Irish, and 10 per cent. English. A barrel of herrings contains 1000, of pilchards, 3000 fish: about half of the herrings and two-thirds of the pilchards are exported. Salmon caught in the Tay sometimes weigh as much as 70 lbs.

# C.—French Fisheries.

# The product in 1880 was as follows:-

	Kine	i.				Tons.	Value.
Cod						84,000	£310,000
Herring	and	mac	kerel			48,000	680,000
Sardines						88,000	1,650,000
Various	•		•	•	•	10,000	840,000
	Tot	al				180,000	£3,480,000

The difference between deep-sea and coast fishing was as follows:—

	Deep-sea.	Coast.	Total.
Men .	18,000	72,000	85,000
Tons fish	84,000	96,000	180,000
Value.	£350,000	£3.180.000	£8,480,000

Being an average of £26 per deep-sea, and £44 per coast fisherman.

# D.—Norway Fisheries.

	Cod.	Herring.	Total.
Fishermen	58,000	53,000	111,000
Fish, millions .	65	410	475
Value	£920,000	£640,000	£1,560,000

Besides the above the Norwegians take 350 whales, 80,000 seals, and in fresh waters a quantity of salmon.

# E.—CANADIAN FISHERIES.

Fish.					Value.
Cod, tons .				45,000	£520,000
Herring, tons				48,000	580,000
Seals, Number				460,000	280,000
Whale, &c	•	•	•	•••	1,070,000
Total.					. £2,450,000

FLAX. A.—Production.

			T	ousand Tons.	Thousand	Lbs. per Acre.
United Ki	ngdon	a.		25	154	360
France .				37	165	510
Germany .				48	292	870
Russia .				270	1,950	280
Austria .				53	262	460
Italy .				23	203	255
Belgium a	nd Ho	lland		38	187	450
Scandinav				4	41	218
United St	ates .	•	•	12	160	175
Tot	al.			510	3,414	835



#### FLOODS—FLOUR.

#### B.—Consumption in United Kingdom.

₩.	Year.		İ	Value per			
16	I car.		British.	Imported.	Total,	Ton.	
1820	•		80	57	87	£80	
1830			35	103	138	80	
1840			40	170	210	70	
1850			46	202	248	36	
1860			65	163	228	50	
1870			72	219	291	52	
1880			58	169	227	45	

New Zealand phormium gives 17 per cent. of flax.

#### C.—Consumption in All Countries.

United Ki France Germany Russia.	ngdo	om	•	Tons per Annum. 104,000 66,000 35,000 41,000	Austria 60,000 Italy and Switzerland 11,000 Belgium and Holland 30,000 United States 20,000	•
FL00	DS.					

#### FLOODS.

Date.		Place.		Loss.
1642		China		300,000 lives.
1646		Holland .		110,000
1875		Toulouse .		£15,000,000.
1876		Bengal		200,000 lives.
1879		Zegedin .		£8,500,000.
1883		Rhine Valley		£6,000,000.

In the last-mentioned the area of country under water was 260 square miles, equal to the extent of the Lake of Constance.

#### FLOUR.—The nutritive value is as follows:—

Ordinary En	glish			100	ł	Essex (	Engl	and)		121	
German .	٠.			115	- 1	Scotch	•			134	
Canada .	_	_	_	117	1	United	Stat	P.S.	_	145	

There are 12,000 flour-mills in the United Kingdom, valued at 25 millions sterling.

A sack of flour containing 280 lbs. will make 368 lbs. bread in England, and 420 lbs. in the United States, 7 lbs. of American flour being equal to 8 lbs. of the best English. One ounce of flour contains 148 foot-tons of energy, sufficient to lift a male adult 500 feet. See Diet.

FOOD.

# A .- YEARLY CONSUMPTION OF NECESSARIES.

	]	Per Inhab	dtant, Lbs		۱ _				
	Grain.	Meat.	Butter.	Sugar.	<b>"</b>	alue	•		
United Kingdom	830	105	13	68	£7	2	0		
France	405	74	4	21	5	4	0		
Germany	415	69	8	21	5	8	0		
Russia	440	48	3	7	3	4	0		
Austria	410	64	5	14	4	16	Ō		
Italy	320	23	1	7	8	8	Ó		
Spain	360	49	1 0	5	8	8	0		
Belgium and Holland	400	69	6	16	4	9	Ō		
Denmark	400	70	15	81	5	10	Õ		
Sweden and Norway.	840	65	9	17	3	17	Ō		
United States	892	120	16	23	6	6	0		
Average	405	70	7	20	5	6	0		

# B.—Consumption of Luxuries, per Inhabitant.

		Ounce	<b>s</b> .	Gallona.			
	Coffee.	Tea.	Tobacco.	Wine.	Beer.	Spirits	
United Kingdom .	15	72	23	0.44	28.60	1.05	
France	52	1	29	20.12	5.10	0.90	
Germany	83	1	72	2.70	19.40	1.33	
Russia	3	7	26	0.38	0.80	2.20	
Austria	35	i	80	7.50	6.50	0.80	
Italy	18	1	22	17.60	0.70	0.30	
Spain	4	1	32	13.50	0.10	0.20	
Belgium and Holland	175	8	84	0.80	22.20	2.60	
Denmark	76	8	61	0.30	12.60	4.30	
Sweden and Norway	88	2	29	0.20	5.40	4.20	
United States	115	21	59	0.60	10.20	1.50	
Average	44	11	41	5.50	8.60	1.10	

There are many valuable items of food besides those in the foregoing tables. Grain is largely supplemented by potatoes in Ireland and Germany, and by chestnuts in Italy: moreover, this column does not include rice, the consumption of which is rapidly increasing. Meat includes fowl, but neither game nor fish, nor lard, all of which enter largely into European food. Cheese (q.v.) is another important item not included above. The same may be said of fruit and vegetables.

FOOD.

#### C.—Cost of Food.

		)	Cillions A	L.		A	rerag	
	Grain.	Meat.	Liquor.	Sun- dries.	Total.		per bita	
United Kingdom .	55	140	102	176	473	£13	9	0
France	72	105	74	141	892	10	8	0
Germany	80	126	80	154	440	9	5	0
Russia	112	107	84	218	516	6	8	0
Austria	56	88	63	113	820	8	8	0
Italy	42	25	87	80	184	6	6	0
Spain	82	21	20	50	123	1 7	11	0
Belgium & Holland	21	17	19	45	102	10	14	0
Denmark	5	5	5	8	23	111	8	0
Sweden & Norway	11	10	8	23	52	8	6	0
United States	85	110	74	255	524	10	9	0
Total	571	754	566	1,258	3,149	£9	8	0

#### D.—Comparative Cost of Food.

	Millio	ns £.	Ratio of	Days of
	National Earnings.	Food Value.	Food to Earnings, per Cent.	Work Equal to Food.
United Kingdom	1,247	473	37.8	114
France	965	392	40.6	121
Germany	850	440	51.8	155
Russia	848	516	60.2	180
Austria	602	320	53.1	159
Italy	345	184	53.3	162
Spain	218	123	56.5	164
Belgium and Holland	224	102	45.5	143
Denmark	45	23	50.6	152
Sweden and Norway.	104	52	50.0	150
United States	1,420	524	37-0	113

The days of work are 300 per annum, allowing rest on 52 Sundays, and 13 days of sickness for each inhabitant, the latter being Dr. Farr's average.

Those countries are relatively the most affluent where the cost of food is lowest as compared with total earnings, viz., Great Britain, the United States, and France, and in these wealth will most rapidly accumulate. But if we consider only the working classes (see Wages), we find that in the United States the cost of food is exactly one-third the value of labour, whereas in Great Britain it is almost one-half, and in France still more.

# E.-Food Imports into United Kingdom.

		The	usands of ?	Per Inhabitant, Lbs			
		1860.	1870.	1890.	1860.	1870.	1880.
Wheat .		1,588	1,853	8,810	123	137	212
Meat	I	91	144	650	7	10	41
Butter .		43	58	116	8	4	7
Cheese .		30	52	88	2	4	5
Sugar	: :I	441	765	999	83	55	64
Tes		85	54	72	2	4	5
Coffee	: :1	16	14	14	l ī	1	li
Rice		19	95	220	Ιī	7	14
Eggs	$\cdot \cdot  $	8	22	87	1	l i	2
Total .		2,271	8,057	5,506	172	223	851

Each inhabitant consumed in 1870 twice his own weight of imported food, and in 1880 three times his weight. Meat includes lard.

# F .- VALUE OF FOOD IMPORTS, UNITED KINGDOM.

					Millions &	•	Shilling	s per Int	abitan
			Ī	1860.	1870.	1880.	1860.	1870.	1880.
Wheat		•	<u>.</u> l	20.9	19.7	39.3	15	13	23
Mest .			.	4-4	7.7	26.6	3	5	15
Butter			. 1	4.1	6.8	12-1	8	5	7
Cheese			٠. ا	1.6	3.3	5.1	1	2	3
Sugar .				12.4	17.6	22.2	8	11	13
Tea .			. 1	5-9	9∙0	8.8	4	6	5
Coffee .			.	1.2	0.8	1.3	1	1	1
Rice .			.	0.4	0.9	2.1	l	l	ī
Eggs .	•	•		0.2	1.1	2.2		1	2
Total			.	51.4	66.9	119.7	35	44	70

The United Kingdom imports of food, compared with consumption, are as follows:—37 per cent. of the meat (including lard), 58 per cent. of the cheese and butter, and 61 per cent. of the wheat, necessary for its annual supply

# G.—FOOD OF FRENCH CITIES.

#### PER INHABITANT, PER ANNUM.

Bread	_				Lha. 449	Wine				G	allona 35
	•	•	•	•			•	•	•	•	0.,
Meat					127	Beer			•		5
Butter					8	Cider					6



208

# FOOD.

The consumption in Paris, 1880, was as follows:—

		_		P	er Inhab Lbs.		Pe	r Inbab. Lba.
Meat					187	Butter and cheese		18
Fish			•		29	Vegetables and fruit		16
Fowl	•		•		24	Coal		960

Also 127 eggs, 48 gallons wine, and 1½ gallon spirits.

The consumption of bread per inhabitant in Paris has declined as follows:—

Year. 1833–35				Lbs.	Year. 1860–69				Lba. 361
1000-00	•	•	•	054	1000-09	•	•	•	901
1856-59				845	1879 .		•		331

The consumption of bread per inhabitant is falling in most French cities, viz.:—

			Lbs. per	Annum.	1			Lbs. per A	DDUM.
Lille . Marseilles	:	:	1865-69. . 528 . 477	1879. 493 559	Bordeaux . Lyons	-	_		1879. 3 <b>63</b> 383

The consumption of meat averages per annum 181 lbs. per inhabitant in Lyons, 156 in Bordeaux, and 112 in Lille. The ratio is rising in these towns.

#### H.—FOOD EXPORTS OF UNITED STATES.

			1	Million	<b>s</b> .	Pe	er Inhab	itant.
Ye	ar.		Grain, Bushels.	Meat, Lbs.	Butter and Cheese, Lbs.		Meat, Lbs.	Butter and Choese, Lbs
1821	-	_	5	22	1	0.2	2:2	0.1
1831			11	24	2	0.9	2.0	0-2
1841			9	47	5	0.5	2.6	0.3
1851			14	78	11	0.6	3.3	0.5
1861			66	142	48	20	4.4	1.5
1871			62	235	73	1.6	6-0	1-9
1881			285	1.536	180	5-6	30.1	3.6

Meat includes lard and live cattle.

# L-FOOD EXPORTS OF RUSSIA.

		Milli	ions.	
		Grain, Bushela.	Moat, Lbs.	Value of both.
1861		. 56	8	£9,200,000
1865		. 57	13	8,600,000
1870		. 121	36	20,800,000
1875		. 128	48	21,100,000
1880	•	. 137	68	24,200 000

# FOREIGN RESIDENTS-FOREIGN SERVICE. 209

Ξ

# POREIGN RESIDENTS.

# A .- Foreigners in Various Countries (1880).

	Thou-	Percentage of Pop.		Thou-	Percentage of Pop.
United Kingdom	127	0.86	Swed and Nor.	17	0.27
France	864	2:30	Greece	20	1-20
Germany	291	0.64	Roumania	89	1.82
Russia	148	0.21	Europe	2,366	0.80
Austria	127	0.35	United States.	6,680	18.40
Switzerland	211	7:77	Brazil	248	2.64
Italy	278	1-02	Argent. Repub.	212	11-20
Spein	41	0.26	Egypt	83	1.52
Holland	64	1.65	Chili	27	1.31
Belgium	98	1.96	China	4	•••
Denmark	54	2.84	Japan	2	0.01

# B.—Foreign Residents at Various Periods.

	'	Thousands.		Ratio to Population.			
	United Kingdom.	France.	United States.	United Kingdom.	France.	United States.	
1880 .		864	6,680		2:30	13.40	
1870 .	161	731	5,569	0.52	2.03	14.48	
1860 .	102	475	4,136	0.35	1.33	13.10	
1850 .	62	871	2.241	0.23	1 06	9.62	
1840 .	36	•••	859	0.13		5.10	
1820 .	1 1	•••	177		•••	1.85	
1800 .	1		44			0.62	

# C .- FOREIGNERS IN CITIES.

		Per 1000	i		er 1000	]	Per 1000
		lnhab.		I	nhab.		Inhab.
Paris .		75	Berlin		13	Buenos Ayres	88
London		21	Pesth-Buda		14	Montevideo .	96

# D.-Foreigners in Paris (1881).

The	umnds.	Tho	usands.		Thou	sands.
Belgians		lish	11	Austrians		5
Germans		sh	9	Spaniards		4
Italians		ricans .	6	Various .		5
Swiss	21   Russ	ians	6			
	Total			164		

FOREIGN SERVICE.—Between the years 1691 and 1745 there were 453,000 Irishmen who died in the French service.



210

#### FORESTS.

#### FORESTS.

# A .- Forests of the World.

	Forest	A BATIO TO		Product, per Acre.			
	Millions of Acres.	Total Area.	Forest, per 100 Inhab.	Cubic Feet.	Shillings		
		Per Cent.					
United Kingdom .	2	8	6	60	15		
France	23	17	60	50	8		
Germany	33	25	75	44	7		
Russia	485	33	665	20	2		
Austria	46	27	127	52	4		
Italy	11	15	40	45	4 5 8 5		
Spain and Portugal	8	6	38		5		
Belgium and Holl.	11	10	16	48	8		
Scandinavia	63	82	740	20	5		
Europe	673	27	220	35	8		
United States	176	8	843	18	9		
Canada	174	9	4,410	2	l		
Brazil	135	6	1,390	1			
Gran Chaco	37	35	•••				
Algeria	6	8	180	•••			
Total	1,201	12	833	•••	·		

Since 1848 the French have converted 9 million acres of waste land into forest, producing 7 shillings an acre. Paris burns the timber of 50,000 acres yearly, requiring an area of 1 million acres of forest to keep up the supply. Woodcutters in the United States fell 10,000 acres daily, or 3 million acres per annum. There are (1882) 15,100 saw-mills in United States, and 640 in Canada. State and Communal forests in France cover 8 million acres, and are valued at £15 per acre.

#### B .- Forests in Germany.

	Forest Area, Acres.	Acres per 100 Inhab.	Crown Forests, Product per
Prussia .	16,360,000	59	£1,070,000
Bavaria .	6,270,000	121	640,000
Wurtemburg	1,550,000	80	220,000
Other States	8,630,000	78	1,740,000
Total .	32,810,000	<del>7</del> 5	£3,670,000

#### C.—Crown Forests.

	Area, Acres.	Product.	Per Acre, Shillings,
France	2,560,000	£1,520,000	12
Germany	9,430,000	3,670,000	8
Austria	7,520,000	1,480,000	4
Russia	833,400,000	13,200,000	1
Sweden and Norway	10,300,000	1,500,000	3
Italy	540,000	220,000	8
Total	363,750,000	£21,590,000	

Russian crown forests comprise 30 million acres belonging to the Czar and 303 millions to the National Exchequer: the annual product averages only 10 pence per acre, against 30 pence in forests not belonging to the State. The Czar employs 27,000 wood-police, who cut 12 million tons, chiefly firewood, per annum, that is,  $1\frac{1}{2}$  tons daily, valued at 2 shillings per ton (50 cubic feet). In Hungary, besides crown forests, there are  $1\frac{1}{2}$  million acres held by the clergy: the yield of Austrian and Hungarian forests is nearly 60 per cent. firewood, 40 per cent. for carpenters. See *Timber*, *Firewood*.

**FORGERY.**—In one year (1820) no fewer than 46 persons were hanged for forging Bank of England notes, but some of the notes were afterwards asserted to be good. Juries refused to hang any more.

FORTIFICATIONS.—Louis Philippe spent 16 millions sterling on forts, especially the *cuceinte* of Paris. Lord Palmerston spent 7½ millions on the coast fortifications begun by him in 1860. The German Government has spent 2½ millions sterling in military works around Strasburg. The site occupied by the Paris fortifications is 3900 acres, and was valued in 1840 at £140 an acre: it is now about to be sold for £700 an acre, on the levelling of the forts.

#### FOSSILS.—See Geology.

**FOUNDLINGS.**—The Paris hospital receives 105,000 yearly, of whom 60 per cent. die before 12 months. There is a similar hospital at Moscow, which receives 12,000 yearly: the boys are brought up for the navy.

**FOUNTAINS.**—The Drinking Fountain Society of London (established 1859), of which the Duke of Westminster is

#### FREIGHT—FRIENDLY SOCIETIES.

president, maintains 511 fountains and 526 troughs, from which 15 million persons and 6 million horses and other animals drink every month. Sir Richard Wallace erected 50 drinking fountains for the poer of Paris.

#### PREIGHT.

# A.—By LAND AND WATER.

PER 100 MILES, 1 TON.

By sea . . . 6 pence By railway . . 10 shillings , canal . . . 2 shillings , high-road . 30 ,,

The average varies according to country, but the above is a general average for European nations. The merchandise of the world pays £8 ocean freight for every £100 worth carried.

# B .- Freights by Railway per 100 Miles, per Ton.

		Pence.		Pence.
Belgium	,	 70	Great Britain	135
Germany .		 84	Great Eastern (England)	120
United States.		 66 !	Great Western ,, .	130
Italy		 108	North-Western	130
Austria		 111	Great Northern	150
Holland .		 118	France	154
Ireland		 119	Sweden	160

The above rates are for grain, except Germany, which is the general average (1882).

#### FRIENDLY SOCIETIES.

#### A .- GENERAL STATEMENT.

	No.	Members, Thou- sands.	Assets, Millions £.	Capital per Mem- ber, &.	Members per 100 lnhab,
Great Britain	13,234	5,780	56.2	9.6	16
France	6,777	1,066	3⋅8	3.6	3
Germany	4,920	1,710	28-6	16.3	4
Russia	477	34	0.3	8.0	
Austria	128	73	0.6	8.2	
Italy	2,091	330	0.9	30	1
Switzerland	632	101	0.3	3-0	4
Holland and Belg.	514	420	0.2	0.5	4
Denmark	721	99	0.1	1.0	5
Canada	40	80	5·1	63∙0	2
Australia	879	55	0.7	13.0	2
Total	35,413	9,748	96.8	9-9	3

# B.—FRIENDLY SOCIETIES OF GREAT BRITAIN.

Nature.		Number.	Members.	Funds,
Friendly .		15,379	4,692,000	£12,750,000
Provident .	:	1,587	716,000	6,337,000
Building .		1,268	872,000	87,080,000
Total .		18,234	5,780,000	£56,167,000

Including non-registered societies, the estimated number of members is 7 millions, or one-fifth of the population; 56 per cent. men, and 44 per cent. women. In 10 years the Oddfellows and Foresters have increased 310,000, and their funds over 2 millions sterling.

#### C.—French Friendly Societies.

		N	Number of Members.				
Year.		Malo.	Female.	Total			
1860		461,000	70,000	581,000			
1870		719,000	107,000	826,000			
1880		925,000	141,000	1,066,000			

The revenue in 1880 was £820,000, of which £670,000 was given to sick and aged members, the balance of £150,000 going to increase the reserve funds, which amount to £3,760,000.

#### D.—GERMAN FRIENDLY SOCIETIES.

Year.		Societies.	Members.	Reserve Funds.
1860		133	31,600	£80,000
1870		740	314,700	2,200,000
1880		4,920	1,710,000	8,650,000

The principal societies are those founded on the plans of Mr. Schultz-Delitsch, who commenced his labours in 1864; they are of a co-operative nature, with a "turn-over" which in 1880 exceeded 140 millions sterling. There is also the Journeymen's Union, with 268,000 members, and an income of £1,100,000, supporting widows and orphans.

#### FROST.

- 1234. Mediterranean frozen: traffic with carts.
- 1420. Bosphorus frozen.

- 1468. Wine at Antwerp sold in blocks.1607. First fair on the Thames.1658. Swedish artillery crossed the Sound.
- 1716. Oxen roasted on the Thames. 1740. Third Thames fair, with shops.

1766. Snow knee-deep at Naples. 1789. Thermometer Fahrenheit marked 23° below zero at Frankfort, and 86° at Basle.

1809. Moscow, 48° below zero, greatest cold recorded there: mercury frozen.

1829. Jakoutsk, Siberia, 73° below zero on 25th January: greatest cold on any record.

1846. December marked 25° below zero at Pontarlier: lowest ever marked in France.

1855. Fires on Serpentine, Hyde Park.
 1864. January, Fahrenheit stood at zero in Turin: greatest cold recorded in Italy.

Captain Parry, in his Arctic explorations, suffered for some time 51 degrees below zero. Frost is diminishing in Canada with the increase of population, viz.:—

# HUDSON'S BAY CLOSED.

1828-37				184 days per annum
1871–80	•		•	179 " " "

FROZEN MEAT.—An engine of 70 horse-power can refrigerate a chamber for 250 tons of meat from Australia to Europe, using 1 cwt. of coal per hour, or 1½ ton per day.

#### FRUIT.—The degrees of sugar in various fruits are :—

Peach .			1.6	Apple .			7-9
Raspberry			4.0	Mulberry			9.2
Strawberry			5.7	Pear .			9.4
Current .	•		6.1	Cherry .			10.8
Gooseberry		_	7.2	Grane	_	_	14-9

#### A .- Importing Countries.

••	Tons per	Annum.	Value (Thous	ands £).	Lbs. per Inhabitant.		
Year.	U. Kingdom.	France.	U. Kingdom.	France.	U. Kingdom.	France	
1855	43,400		1,410		3		
1860	79,100		1.840	l	6		
1865	104,600		2,180		8	•••	
1870	107,400	32,100	2,160	540	8	2	
1875	152,400	61,100	3,810	1,100	10	4	
1880	152,600	169,700	3,260	3,880	10	10	

The United States have regularly imported since 1871 about 6 lbs. fruit per inhabitant per annum.

# FUEL—FUNERALS.

# B.—Exporting Countries.

Year.	To	ns per Ann	am.	Value i	Average Value		
	Italy.	Spain.	Greece.	Italy.	Spain.	Greece.	per Ton.
1862	48,300	87,100	44,100	1,240	710	540	£20
1865	72,600	42,300	58,800	1,640	850	730	19
1870	80,800	62,600	52,600	1,100	1,380	720	16
1875	99,100	78,400	89,800	1,620	1,520	1.470	17
1880	98,500	121,200		1,360	1,680		14

# **FUEL**

# A.—Annual Consumption.

	M	illions.	Per I	nhabitant.
	Coal, Tons.	Firewood, Cubic Feet.	Coal, Cwts.	Firewood, Cubic Feet.
United Kingdom .	180	60	74	2
France	27	850	14	23
Germany	55	760	24	18
Russia	9	2,770	2	33
Austria	16	1,120		29
Italy	8	230	9 2	8
Spain and Portugal .	2	110	2	6
Belgium	12	10	44	
Holland	3	10	14	2 2
Sweden and Norway.	2	320	5	40
Europe'	259	6,240	17	20
United States	70	1,410	28	26
Canada	2	140	9	31
Total	331	7,790	18	22

Pounds of water evaporated by 1 lb. of fuel as follows:—

Straw.			1.9	Coke or charcoal		6.4
Wood.			3.1	Coal		7.9
Peat .			3.8	Petroleum .		14.6

FUNDS .- See Consols.

#### FUNERALS.

# A .- CHADWICK'S TABLE FOR ENGLAND.

Paupers .	•	•	•	13s.	Gentry .			•	£100
Working-class	•	•	•		Nobility	•	•	•	1,000
Middle-class		•		£40	<u> </u>				

Average: £10 for each interment, or 5 millions per annum.

216 FURNACES—FURNITURE.

#### B.—FRENCH OFFICIAL CLASSIFICATION.

				Annual Per	centage.
Funerals of				1872-74.	1878-79.
Rich persons				<b>3·2</b>	3.2
Middle-class .				13.6	14.3
Working-class	•	•	•	83-2	82.2
Total				100-0	100.0
FURNACES (1881	l):-	_			
(	•	No.		Tons Pig Iron	Tons per Furnace,
Great Britain .		555		8,326,000	14,700
United States .		437		4,160,000	9,400
Germany		220		2,790,000	12,700
France		270		1,880,000	7.000
Russia		206		480,000	2,350
Belgium		40		610,000	15,200
Austria	Ċ	98		520,000	5,300
Sweden		224		390,000	1,760
Total .		2,050		19,156,000	9,400

FURNITURE —Including also carriages, clothing, jewellery, paintings, &c.; the value under this item amounts to half the value of house-property.

# A .- FURNITURE IN UNITED KINGDOM.

Year.				Millions &	Per House.	Per Inhab.
1802.				190	£70	£12
1830.				270	75	13
1850.				440	95	16
1860.	·			580	118	20
1870.	·	·		740	131	24
1880.	Ċ	Ċ	:	1.030	158	29

#### B.—Classification in 1880.

				Aver	age.
Class.		Houses, Thousands.	Furniture, Millions &	Per House.	Per Inhab.
lst .		. 23	136	£5,900	£1,080
2nd .		. 261	274	1,050	190
3rd .		. 563	172	307	55
4th .		. 1,423	186	130	23
5th .		. 4,175	262		62 11
Tota	1	. 6,445	1,030	£158	£29

The above does not include churches or other public buildings.

FURS.—The principal fair is at Leipzig: the sales in 1880 were:—

#### THOUSANDS OF SKINS.

Bear			6	Beaver .	80	1	Fox.		180
<b>Sable</b>			54	Black cat	125	1	Skunk .		950
Otter			66	Ermine .	160		Squirrel	, &c	 4,855

In Russia and Siberia the annual slaughter of fur-bearing animals is as follows:—50,000 martens, 3 million ermines, 15 million marmots, 25 million squirrels.

# G

GAELIC.—The number of persons speaking Gaelic in the United Kingdom is as follows:—

					Number.	Ratio to Population, Per Cent.
Ireland					660,000	13
Scotland					282,000	7
Wales .		•	٠.	•	850,000	83
						-
Unite	d Ki	ngdo	m.		1,242,000	4

#### GARRISONS.

# A.—BRITISH COLONIAL.

Station. Mediterranean West Indies Africa Ceylon, &c	:	Men. 11,000 6,400 6,600 8,500	Annual Cost. £750,000 470,000 600,000 260,000	Per Man £68 73 91 74
Total .		27,500	£2,080,000	£75

The garrison in Ireland varies from 20,000 to 30,000 men. In India it is ordinarily 70,000. In Great Britain from 60,000 to 70,000.

# B.—GERMAN (1883).

Berlin .			Mon. 17.800	Coblenz .			Men. 6.400
Metz .	-		14,400	Konigsberg			6,400
Strasburg			9.000	Potsdam .	•	:	6,600
Mayence .		-	7,700	Madgeburg	:		6,100
Cologne .			7,700	Spandau .	•		4,300

There are 29 smaller garrisons, ranging from 2000 to 4000 men each.

#### GAS.

#### A.—Cost of Street Lighting.

			Cost, per Annum.	Price per 1000 Feet, Pence.	Cost, per Inhab., Pence.	Candle Power.
London			£460,000	45	80	12
Paris .			620,000	68	70	18
Rome .			24,000	•••	20	•••
Vienna			43,000	45	10	15
Berlin .			53,000	51	13	16
New York			•••	120		16
San Francis	co		59,000		67	
Glasgow		-		48	•••	28
Bucharest		•	20,000		24	
Palermo	•		20,000	•••	23	
Liverpool	•	·	,	42		22
Turin .	:	•	18,000		20	
Florence	•	·	14,000		22	•••
Manchester	•	·		86		22
Buda-Pesth	:	÷	16,000		12	

# B.—Consumption in London and Paris.

		Lone	don.	Paris,		
		1860.	1880.	1860.	1880.	
Millions cubic feet.  Per inhab	:	8,200 <b>2,930</b>	18,100 4,750	2,660 1,610	8,470 3,940	

The Paris Gas Company in 1880 showed receipts £3,450,000, net profit £1,500,000. Paris has 49,000 street lamps, the other French towns 190,000; total 239,000.

# C.—Consumption in United Kingdom.

	London.	Other Towns.	Total.
Millions cubic feet .	18,100	53,500	71,600
Per inhab	4,750	3,100	8,400

The average expenditure for gas is 21 shillings per inhabitant per annum in London, and 10 shillings in other towns. A ton of coal gives 9000 cubic feet of gas.

#### D .- LONDON GAS AND WATER SUPPLY.

	T	househous Omitte	ea
	Gas.	Water.	Total.
Capital	£13,026	£12,250	£25,276
Income	3,993	2,150	6,143
Expenses	2,610	1,420	4,030
Profit, per annum	1,383	730	2,113



# GEOLOGY-GLASS.

GEOLOGY.—Professor Philips gives the following table

f strata, and number	of organ	ic forms to	ne lonowing table each stratum :—
	<b>-</b>	Feet Thick.	Organic Forms per 100 Feet.
Tertiary .		. 2,000	141
Cretaceous.	• •	. 1.100	71
Oolitic .	• •	2,500	46
Saliferous .	• •	. 2,000	8
Carboniferous	• •	. 10,000	5
Primary .	• •	20,000	2
A	.—Fossil	REMAINS.	
Mammalia	. 144	Terrestrial	plants . 500
Reptiles	. 71		animals . 830
Fishes	. 183	Marine plan	nts 40
Insects	. 74		mals 6,065
Conchifera	. 2,026	Fresh-wate	r plants . 40
Gasteropoda .	. 880	. ,,	animals . 260
Kephalopoda .	. 788	••	
Crustacea, &c.	. 1,970	Total	7,235
Total	6,136		
GLANTS.	A.—Ar	CIENT.	
Name.	Place.	Height, Feet.	Period.
Goliath	Palestine		в.с. 1063.
Galbara	Rome .	10.0	Claudius Cæsar.
Funnam	Scotland	11.5	Eugene II.
De Vallemont .	Rouen	17.0	14th century.
Count Bucart .	Dauphiny.	22.6	16th "
Theutobochus .	Dauphiny.	25· <b>5</b>	16th ,,
Unknown	Palermo .	30.0	15th ,,
John Middleton.	England .	9.3	A.D. 1578.
	В.—Мо	DDERN.	
Name.	Birthplace.	Height,	Date.
Frederic's Swede	Sweden	Feet. 8·4	=
<b>a</b> :			•••
Cujanus	Thursday .	. 7.9	•••

Name.	Birthplace.	Height, Feet.	Date.
Frederic's Swede	Sweden	. 8· <b>4</b>	•••
Cujanus	Finland	. 7.9	•••
Gilly	Tyrol	. 8·1	•••
Patrick Cotter .	Cork	8.7	1806
Chang Gow	Pekin	. 7.8	1880

# GLASS.—Consumption in United Kingdom as follows:—

1901	•	•	•	•	•	10,300	cons.
183 <b>3</b>	•	•	•	•	•	18,200	,,

In 1880 the consumption of plate glass in Great Britain amounted to 6 million square feet, of which one-sixth was imported, the rest native manufacture.

# GLOVES-GOLD.

GLOVES.—France makes yearly 26 million pairs, and exports 18 million pairs. In 10 years ending 1880 Great Britain imported 15 million pairs per annum, valued at 1½ million sterling.

#### GLYCERINE.—Production in 1880:-

England France . Germany Holland .	•	:	Tons. 800 4,000 1,500 900	Russia Belgium Italy Spain	:	•	•	Tona. 900 800 400 200
	-	-				•		

#### GOATS.

United Kingdom	Thousands.	Thousands. Spain 4,531
France	. 1,610	Portugal 937
Germany .	. 2,330	Belgium and Holland 843
Russia	. 2,060	Scandinavia 550
Austria	. 1,550	Roumania 194
Italy	. 1,720	Turkey 720
Switzerland .	. 374	South Africa . 2,790
Greece	. 1,840	India 19,000

An ordinary goat gives a quart of milk daily, and lives 10 years. The Turkish breed, known as Angora, produces a fine hair worth 2 shillings per lb.—say 2 lbs. per goat per annum. One-third of the goats in South Africa are of Angora, or mixed breed, the first having been introduced from Smyrna in 1860.

GOITRE.—In France 42,000 persons affected, two-thirds women. It is prevalent in parts of Switzerland and at Mendoza (foot of the Andes), supposed to be caused by snow water.

#### GOLD.

# A.—Production in 500 Years (1380-1880).

		Tons.	Millions &	Ratio.
United States		2,042	286	19.7
Australia .		1.840	258	17.8
Spanish-America		2,220	810	21.5
Brazil		1.040	145	10-0
Russia		1,235	173	12-0
Africa	·	740	104	7:1
Austria .	•	460	65	4.4
Other countries		778	107	7.5
Total .		10,355	1,448	100-0

220

#### B.—Periods of Production.

A.D.		Tons.	Increase of Period.	Total Value, Millions &
1600		750	•••	104
1700		1,660	910 tons	232
1800		8,570	1,910 "	497
1850		4,750	1,180 "	661
1880		10,355	5,605 ,,	1,448

# C.—Production since 1850.

#### Millions £.

United States	1851-60. 102	1861-70. 98	1871-80. 70	80 years. 270
Australia .	. 104	82	72	258
Russia	. 88	40	48	126
Other countries	. 38	44	50	132
Total .	. 282	264	240	786

# D .- Production and Consumption.

Years.	Production,	Consumption, Tons.			
	Tons.	Coinage.	Manufacture.	The East.	Total.
1831-40 .	203	50	180	10	240
1841-50 .	548	350	200	28	578
1851-60 .	2,018	1,633	280	100	2,013
1861-70 .	1,885	1,008	570	300	1,878
1871-80 .	1,703	849	840	120	1,809
50 years	6,357	3,890	2,070	558	6,518

Years.	Production, Millions £.	Consumption, Millions £.				
		Coinage.	Manufacture.	The East.	Total	
1831-40 .	28	7	25	1	33	
1841-50 .	77	49	28	4 1	81	
1851-60 .	282	228	39	14	281	
1861-70 .	264	142	80	42	264	
1871-80 .	240	119	118	17	254	
50 years	891	545	290	78	913	

For gold movement since 1860 see Bullion.

The above table shows that the production since 1831 was not enough, but that the world used up some of previous stock existing, as has likewise occurred with Silver (q.v.)



#### GOLD—GRADIENTS.

## E.—Production in Four Years (1881-84).

					Tons.	Value.
United States.					180	£25,800,000
Russia					165	23,600,000
Australia .					120	17,200,000
Spanish-America					40	5,700,000
Japan, Africa, &	c		•	•	35	4,900,000
Total .		•-			540	£77,200,000

The largest nugget ever found was the "Welcome," at Ballarat, Australia, on June 11, 1858; it weighed 2020 oz., and was worth £8376. Australian ore has averaged only 30 shillings per ton, Californian £2, and the earnings of miners £85 and £90 respectively per annum.

Gold bearing the "hall-mark" must have at least 18 carats, representing a value of 64 shillings per ounce: the British standard is 22 carats, worth about 78 shillings (£3,17s.10d.) per ounce. The wear and tear of coin amounts to 1 ton of gold per annum. Allowing also for loss by shipwreck, fire, &c., the stock of existing gold is about 9500 tons, or 2½ times the amount of coin. Jewellers melt down nearly 100 tons per annum, of which one-third is in France, one-fifth in England.

#### GRADIENTS.

#### A .- RAILWAYS WITH HEAVY GRADIENTS.

Line.	Situate	Maximum Gradient, per Cent.	Maximum Height, in Feet.
Florence-Bologna	Apennines .	. 21	1.980
Mont Cenis	Alps	. 3	4,290
Genoa-Turin	,,		1,320
Darjeeling		. 4	
Poti-Tiflis		. 41	•••
Einsiedeln			2.910
Oroya		. 6	15,840
Zurich-Utliberg .		. 7	
Righi	,, .	. 21	•••

The Zurich-Utliberg is the maximum of simple adhesion, the Righi being furnished with clip-brakes. The Vesuvius line has one gradient said to be as steep as a ladder (63), the Righi being compared to a staircase. The Philadelphia and Pittsburg has an inclined plane of 46 in 100, length 840 feet. Cantagallo, Brazil, has 9½ per cent. incline.

222

# GRAIN.

2 ,	R	eelete		Gradient 5 per ce 8 "10 "		Resistance. 37 lbs. per ton
C.—M']	NEI	LL'8		COACH I		
				e Required at	~	
_ Gradient			6 Miles.			0 Miles.
Lovel .	•	•	111 lbs			28 lbs.
2½ per cent.	•	•	160 "	166		172 "
4 ,,	•	•	213 "	219	,,	225 ,,
5,	•		268 "	296	,,	818 "
GRAIN.	<b>A</b>	—С	BOPS O	F THE W	ORLD.	
			illions Acres.	Millions of Bushels.	Value, Millions &	Bushels ver Acre.
Wheat.	_		154	2.076	540	18
Oata	•	•	86	1,794	205	21
Barley .	•	•	47	819	133	17
Rye .	•	•	115	1.408	232	12
	•	•				
Maize, &c.	•	•	103	2,300	236	22
m 4.1				0.007	1.040	
Total	•	•	505	8,397	1,346	17

## B.-ACREAGE UNDER GRAIN.

	ł	×	illions of A	cres.	
	Who	at. Oats.	Barley.	Other Kinda	Total
United Kingdom	3	0 4.2	2:5	0.8	10.5
France	1 17	1 9.0	3.5	8.5	38-1
Germany	4	.5 9.1	1 4.0	17.1	34.7
Russia	. ` 29	0 33.0	16.2	82.8	161-0
Austria	. 8	·5   7·1	5.0	15.5	36.1
Italy	. 11	5 10	' 1∙0	5.5	19.0
Spain and Portugal		∙0 1.0	4.0	5.0	19.0
Belgium and Holland	1	0   10		20	4.0
Scandinavia	0	5 2.5	1.0	3.0	7:0
Roumania, &c	., 4	0 ; 0.5	20	4.0	10.5
Europe	.   88	1 68.4	39.2	144-2	339-9
United States	. ; 35	-2 15.0	2.0	650	117-2
Canada	. 2	0 20	0.5	0.2	51
Australia	. 3	∙0	0.5	0.5	4.0
India	. 19	າ   ທາ	٠	•••	19-0
Japan	-	•0	2.0	1.0	4:0
Egypt		·	1.0	1.0	3.0
Algeria	. 2	•0	2.0	•••	4.0
South America	. ; 3	•		60	9-0
The World .	154	3 85.1	47-2	218-2	505.1

## C.—Grain Crops of Countries.

		Milli	ons of Bu	shels.		Value.
	Wheat.	Oats.	Barley.	Other Kinds	Total.	Millione &
United Kingdom .	74	130	90	28	322	68
France	272	220	80	154	726	161
Germany	94	180	86	274	634	129
Russia	210	520	130	850	1,710	266
Austria	115	130	80	223	548	110
Italy	140	20	20	113	293	65
Spain and Portugal .	145	13	76	91	825	63
Belgium and Holland	24	85		46	105	21
Scandinavia	7	76	37	50	170	84
Roumania, &c	85	10	40	90	225	45
Europe	1,166	1,334	639	1,919	5,058	967
United States	440	405	40	1,585	2,470	207
Canada	45	55	15	15	130	22
Australia	85		15	10	60	13
India	270	<b> </b>			270	67
Other countries	120		110	179	409	70
The World	2,076	1,794	819	3,708	8,397	1,346

## D.—Production and Consumption of Grain.

	Millions	of Bushels.	Bushels	per Inhab.
	Produc- tion.	Consump-	Produc- tion.	Consumption.
United Kingdom .	322	607	9.1	17:3
France	. 726	895	20.4	25.3
Germany	. 634	750	14.1	16.7
Russia	. 1,710	1,500	22.8	20-0
Austria	. 548	516	14.8	13.9
Italy	293	298	10.7	10.9
Spain and Portugal.	325	325	16.2	16-2
Belgium and Holland	. 105	145	11.1	15.5
Scandinavia	. 170	160	20.1	18-9
Roumania, &c	. 225	205	<b>32·1</b>	29.3
Europe	5,058	5,401	16.8	18.0
United States	. 2,470	1,740	48.8	34.1
Canada	. 130	120	31-2	28.8
Australia	. 60	40	22.2	14.8
Algeria	. 50	45	16.6	15-0
Argentine Republic.	. 16	12	5.3	4-0
Other countries .	. 643	1,069	••	
Total	8,397	8,397		ı

#### GRAIN.

# E.—Grain Crops of United Kingdom. (Average for 10 Years ending 1880).

		United	Mn	Millious of Bushels.			
		Kingdom, Acres.	Great Britain.	Ireland.	United Kingdom,		
Wheat		8,468,000	80	4	84		
Oats .		4,158,000	113	55	168		
Barley.		2,704,000	83	8	91		
Rye .	•	61,000	2	•••	2		
Total		10,386,000	278	67	845		

#### F.—GRAIN IMPORTS INTO UNITED KINGDOM.

Period. 1761-80. 1781-90. 1791-1800 1801-10.		Annual	Average.	1	Annual Average,			
		Million Bushels,	Lbs. per Inhab.	Period.		Million Bushels,	Lba per Inhab	
<b>1761-80</b> .		1	5	1831 <del>-4</del> 0.		8	18	
<b>1781-90</b> .		1	5	1841-50.		31	64	
1791-1800		4	15	1851-60.		78	154	
1801-10.		5	17	1861-70.		127	238	
1811-20.		4	12	1871-80.		229	874	
1821-30.	•	5	12	1881 .	•	256	409	

#### G.—GRAIN IMPORTS INTO FRANCE—VALUE.

Period.		Annual Average.	Per Inhabitant,
1841-60	٠	 £1,410,000	10 pence
1861-70		 3,110,000	21 ,,
1871-80	٠	 10,400,000	72 ,,

The above shows net imports—that is, after deducting values of exported grain in years of surplus.

## H.—Grain Exports of United States.

Period.	Million	Lbs. per	Period.	Million	Lbs. per	
1821-40.	Bushels.	Inhab. 26	1861-70.	Bushels. 48	Inhab. 76	
1841-50.	15	41	1871-80.	147	211	
1851-60.	29	60	1881 .	285	312	

## I.—Grain Crops of United States.

					Million Bushels.					
Wheat				1850. 101	1860. 173	1870. 288	1880. 460			
Barley				5	16	30	44			
Oats .				147	173	282	408			
Rye .				14	21	17	20			
Buckwhea	ŧ			9	18	10	12			
Maize	•	•	•	592	839	761	1,755			
Total		•	•	868	1,240	1,388	2 699			



#### 226

## GRANITE-GRAVITY.

#### K.-Grain Crops and Exports of Russia.

Period.		Million 1	Bushels, p	er Annum.	Bushels, per Inhabitant.			
		Crop.	Export.	Home Consump.	Crop.	Export.	Home Consump.	
1800-13 1834-40 1840-47	:	890 1,040 1,210	10 27 32	880 1,013 1,178	22 21 23	1	21 ह 20 ਵੇ 22 ਵੇ	
1857–63 1871–80	:	1,270 1,730	34 146	1,236 1,584	20 22	. 2	19 <u>1</u> 20	

### L.—Components of Grain (per Cent.)

	Starch and Sugar.	Nitrogenous.	Fat.	Salts.	Water.
Maize	 65.1	11·1	8.1	1.7	14-0
Rye Wheat	 78· <b>2</b>	8.0	2.0	1.8	15-0
$\mathbf{W}_{\mathbf{heat}}$	 70.5	10.8	2.0	17	15-0
Barley	 74.3	6.3	2.4	2.0	15-0
Rice	 79.5	63	0.7	0.5	13-0
Oats	 63.8	12.6	5.6	8.0	15-0

GRANITE is worth 4 shillings per cubic foot, and requires a crushing force of 24,500 lbs. to a half-inch cube.

### GRAVITY, SPECIFIC.

#### A.—COMPARED WITH WATER.

Liquids.		Timber.		Metals.	
Water	100	Cork	24	Zinc	719
Sea water	103	Poplar	88	Cast iron	721
Dead Sea	124	Fir	55	Tin	729
Alcohol	84	Cedar	61	Bar iron	779
Olive oil	92	Pear	66	Steel	783
Turpentine	99	Walnut	67	Copper	869
Wine	100	Cherry	72	Brass	840
Urine	101	Maple	75	Silver	1.051
Cider	102	Apple	79	Lead	1.135
Beer	102	Ash	84	Mercury	1,357
Woman's milk .	102	Beech	85	Gold	1,926
Cow's ,, .	103	Mahogany	106	Platina	1,950
Goat's ,	104	Oak	117		-,
Porter	104	Ebony	133	İ	

A gallon of wine or water weighs 10 lbs.

#### PRECIOUS STONES.

Emerald		277.5	Diamond.	353.0	Garnet .		406-3
Crystal.		265.3	Topaz	401.1	Ruby .		4283



## GREENBACKS.

227

#### SUNDRIES.

Indigo				77	Peat .		138	Porcelain		226
Gunpo	wd	ler		93	Opium		184	Stone		252
Butter	•			94	Honey		145	Marble .		270
Ice .				117	Ivory.		183	Granite		278
Clay				120	Brick.		200	Ohalk		279
Coal		•		130	Sulphur		203	Glass		289

#### B.—Weight in Cubic Fret.

		Lbs. per Cub. Ft.	Cub. Ft. per Ton.		Lbs. per Cub. Ft.	Cub. Ft. per Ton.
Cork .	•	. 15	150	Peat	 80	28.0
Cedar .		. 86	62	Brick	 120	19∙0
Beech .		. 51	44	Stone	 150	150
Butter		. 56	40	Granite	 166	13.5
Water.		. 62	36	Glass	 172	13.0
Mahogany		. 66	84	Iron	 470	4.8
Ice .		. 70	82	Copper	 520	4.3
Oak .		. 70	32	Silver	 630	3.6
Clay .		. 72	81	Lead	 680	3.3
Coal .		. 80	28	Gold	 1,155	20

GREENBACKS.—Paper money of the United States, inconvertible from 1862 till December 1879.

			Tal	ole of Value Co	mpared with	ı Gold.
Y	ear.		Maximum.	Minimum.	Average.	Value of \$100.
1862	•		98	75	88	£18 6 0
1863			79	62	69	14 6 6
1864	٠.		64	89	49	10 4 0
1865			74	46	64	13 6 4
1866			79	66	71	14 15 0
1867			74	70	72	14 19 0
1868			74	69	72	14 19 0
1869		. '	82	72	75	15 12 0
1870			90	82	87	18 2 0
1871			92	87	90	18 14 0
1872	•	•	92	87	89	18 10 0
1873	•	•	92	85	88	18 6 0
1874	•	•	91	88	90	18 14 0
1875		•	89	85	. 87	18 2 0
1876		•	93	87	90	18 14 0
1877	•		97	94	96	19 19 0
1878		•			98	20 7 0
1879	•	•	100	100	100	20 16 0

The average for 10 years ending 1870 was 75, and for the following decade 93.



#### GUANO-HARBOURS. 228

GUANO.—The Peruvian Government exported from the Chincha Islands between 1850 and 1880 more than 12 million tons, worth 110 millions sterling. Great Britain paid 55 millions for 5,200,000 tons since 1855.

GULF STREAM.—Equal to a river 50 miles wide, 1000 feet deep, current 4 miles an hour, with a temperature of 65° Fahrenheit, cooling down to 40° as it gets north.

#### GUNPOWDER.

	80	ltpetre.	Charcoal.	Sulphur.	Total.
English .		75	15	10	100
French .		75	18	12	100
German		75	11	14	100
Russian		74	14	12	100
Austrian		72	17	11	100
Spanish	•	76	11	18	100
Swedish		75	16	9	100
Chinese		76	14	10	100
American		75	18	12	100
Sporting	•	77	13	10	100

GYPSIES.—The number in Europe reaches 712,000, viz. :---

Great Britain	n		18,000	ı	Austria				197,000
Russia .			15,000	1	Roumania		•		193,000
Scandinavia			7,000		Turkey				200,000
Spain .			40,000	1	Germany, &	cc.	•	•	42,000

#### $\mathbf{H}$

#### HAIL-STORMS.

1656, July 20th, Norwich; wrecked houses and killed many

persons. 1697, May 4th; killed sheep in many parts of England. 1775, May 18th, Murcia, Spain; hallstones like oranges, weighing 20 oz.
1844, in Languedoc, pieces of ice fell, weighing 11 lba.
1874, New Jersey, U.S., hailstones like turkey egga.

Damage to crops in France by hail since 1850 has averaged £1,420,000 per annum.

HANK .- A measure of yarn; 840 yards. "Yarn of sixties" means 60 hanks to the lb., and so of others.

HARBOURS.—See Docks.

HARES AND RABBITS.—About 30 millions are killed every year in the United Kingdom, worth £2,200,000.

HATS.—There are 12 million silk hats made annually in the United Kingdom, worth 4 millions sterling. The most costly hats in the world are those made at Panama, of straw, which take six months to make, and are sold at £5 each.

HAY.				Million Tons.	Value, Millions &.	Tons per Head of Cattle.
United Kingdon	1			4	16	0.25
France				14	32	0.80
Germany				26	60	1.15
Russia				20	20	0.40
Austria				15	30	0.80
Italy				8	6	0.60
Spain and Portu	gal			2	4	0.27
Belgium and Ho	llan	d		8	8	0.85
Scandinavia .		•		7	14	1.12
_						
Europe United States .		•	•	94	190	0.64
United States .		•	•	36	54	0.66
Total .				180	244	0.65

In the above table all kinds of farm-stock are reduced to a common denominator, as already laid down in Cattle.

#### HEAT.

#### A .- Scale in Degrees Fahrenheit.

50. 98. 174.	Ice melts Temperature of globe Blood-heat Alcohol boils Water boils.								1,1 2,2	94 . 40 . 33 .		Lead me Heat of Brass m Iron me	con	i mon	fire.
B.—8	ЗP	EO	FI	σ	Hea	r of M	Ein	ER	AL	8 (W	Δ.	TER BEI	NG	100	0).
	y				83	Copper				95	18	Glass . Sulphur			

#### C .- HIGHEST TEMPERATURE RECENTLY MARKED.

Plac	00.		Date.	Degrees Fah. (Shade),		
London			July 15, 1881 .		. 951	
Naples			,, 25, ,, .		. 96	
Paris			, 15, , .		. 1001	
Rio Jane	iro		December, 1880		. 103	
Adelaide	. B.	A.	January, 1881 .		. 114	

230 HEIGHT	—HERRING-FISHERY.	
HEMP.	Foet. 528 Freyburg Cathedral Salisbury Florence St. Paul's, London Milan Cathedral Brussels Town-hall Invalides, Paris  See Anthropometry.  FION (THOUSANDS OF TONS).	Feet 412 406 393 366 366 366 346
Austria 110   R Italy 90   F	ussia 60   Holland . rance 50   Manilla, &c.	6
		Value per Ton. £18 38 29 30

54,200 HENS.—The average number of eggs laid yearly is 80 per hen.

United Kingdom		Million Hens. 24	Million Eggs. 2.000	Annual Value of Eggs and Chickens. £9,300,000
France		47	8,700	14,200,000
Germany .		36	3,000	12,400,000
Austria	•	8 <b>4</b>	2,800	11,200,000
Italy		20	1,600	6,500,000

Hen-eggs usually form 80 per cent of all eggs in ordinary use. The food of hens costs about 50 per cent. of the value they produce yearly. Mr. Baker, of New York, who is supposed to be "the chicken-king of the world," hatches yearly 250,000 chickens by steam.

#### HERRING-FISHERY.

Fishers.			T	ons Herrings.	Value.
Scotch				140,000	£1,700,000
English				80,000	950,000
Irish .				20,000	240,000
French		•		42,000	550,000
Norwegian				60,000	700,000
Canadian		•		48,000	600,000
Total	-1			890 000	£4 740 000

About 10,000 herrings go to a ton, a British barrel containing 1000, a Norwegian 500 fish. The number of men engaged in herring-fishing is 180,000, who catch on an average 22,000 fish each. See *Fisheries*.

HIDES.—The importation into the United Kingdom shows thus:—

s :			Millions of Lbs.							
Year.		Import.	Export.	Consump-	Made into Leather, Millions Lbs.					
1850		. 68	13	55	70					
1860		. 98	28	70	87					
1870		. 145	39	106	132					
1881		. 165	50	115	144					

British hides will be found included under Leather.

HOLIDAY-TRAFFIO.—During the Christmas holidays of 1882, the railways brought to London 260,000 hampers with presents from friends in the country, and conveyed 138,000 passengers from London to Scotland, Ireland, Manchester, Birmingham, &c.

HOMESTEAD GRANTS.—In 1862 the United States law was passed to encourage settlers from Europe, whereby lots of \( \frac{1}{2} \) square miles or 160 acres are given to immigrants, on condition of 5 years' occupation, the fees for title-deeds seldom exceeding £3 sterling. In this manner the American Government has in 20 years given away 67 million acres to 420,000 immigrant families.

In Canada similar grants are made of 200 acres to the head of a family, and 100 acres to each male adult, subject to these conditions:—(1.) To build a log-hut or house not less than  $16 \times 20$  feet. (2.) To reside for 6 months each year during 5 years on the farm. (3.) To cultivate at least 15 acres in every 100.

Free grants are likewise given in Australia to any settlers not Chinamen; and in Algeria, only to settlers of French extraction.

#### HOPS.

			Acres.	Crop, Tons.	Value.
England			67,000	26,000	£3,120,000
Germany			62,000	19,000	2,340,000
France			9,000	4,500	550,000
United Sta	tes		10,000	5,000	600,000

Germany consumes only three-fourths of her crop, but England has to import annually 7000 tons, her consumption averaging 33,000 tons.

HORSES.—There are 52 million horses, representing a value of 579 millions sterling:—

					•			
			C	Horses Thousands).	Per 100 Inhab.		Horses (Thousands).	Per 100 Inbab.
United I	Zing	zdo		2,906	8	Denmark	852	18
France	.`	٠.		2,833	8	Sweden	466	11
Germany	<i>7</i> .			8,360	7	Norway	152	8
Russia.				16,200	21	Greece	97	6
Austria				8,760	10	Roumania	550	10
Switzerle	baı			110	4	United States	10,838	20
Italy .				658	2	Canada	866	20
Spain .				590	4	Australia	1,605	39
Portugal				70	2	River Plate .	5,150	175
Holland				280	7	Cape Colony .	241	23
Belgium				283	5	Algeria	850	117

A horse lives 25 years, and weighs 1000 lbs. An omnibus or tramway horse lasts only 4 to 5 years. The society for eating horse-flesh, founded at Paris in 1866, consumes over 2 million lbs. yearly, at a cost of  $2\frac{1}{2}$  pence per lb.—the average yield of meat being 450 lbs. per horse.

HORSE-POWER.—One horse-power will raise 10 tons per minute a height of 12 inches, working 8 hours a day. This is about 5000 foot-tons daily, or 12 times a man's work.

(1.) Mail-coach horses: 4 will draw a coach, say 2 tons, at the rate of 10 miles an hour, for 6 days every week, and last 5 years.

(2.) Canal horses: 1 will draw a barge of 25 tons, resist-

ance 108 lbs., at 2½ miles per hour.

(3.) Waggoners' horses: 1 will easily draw a ton 30 miles

in a day of 12 hours.

Sims mentions a Devonshire cart-horse, 15 hands, 1200

lbs., which gave an average of 8000 foot-tons daily.

The horse-power of Niagara is 31 million nominal, equal to 10 million horses effective, and valued at £15,000,000 per annum, if conveyed by electricity to New York.

The measurement of horse-power, that is, of raising a certain weight 12 inches per minute during 8 hours daily, is variously given by the best authorities, viz.:—

 Smeaton
 Lbs.
 Lbs.

 Sims
 .
 .
 .

 Tredgold
 .
 .
 .

 Sims
 .
 .
 .

 Saussure
 .
 .
 .

 Saussure
 .
 .

 Saussure
 .
 .



#### HOSPITALS.

#### HOSPITALS.

#### A .- MUNICIPAL HOSPITALS.

	Subsidy.	Pence per Inhab.		Subsidy.	Pence per Inhab.
Paris	. £358,000	42	Nantes	£15,000	80
Berlin	. 70,000	16	Florence	. 14,000	21
New York	. 84,000	7	Venice .	. 14,000	25
Copenhagen	. 32,000	36	Stockholm	. 11,000	16
Leipsic .	. 31,000	55	Toulouse	. 10,000	18
Marseilles	. 24,000	16	Turin .	. 10,000	13
Vienna .	. 23,000	5	Buda .	. 9,000	6
Genos	. 28,000	27	Christiania	. 8,000	22
San Francisc	o 20,000	21	Rennes .	. 8,000	21
Rouen	. 19,000	44	Havre .	. 5,000	11
Bordeaux	. 17,000	18	Frankfort	. 4,000	8

#### B.—Principal Hospitals in United Kingdom.

Hospitals.	Founded A.D.	Beds.	Annual Patients.	Death- Rate.
St. Bartholomew's .	1547	600	5,500	6-0
St. Thomas's	1548	860	8,200	12.0
Guy's	1722	620	5,600	9.7
Bristol	1735	270	2,600	7.0
Leicester	•••	220	2,000	5.0
Edinburgh	1736	500	4,500	10.5
Aberdeen	1739	240	2,100	6.5
Manchester	1753	830	3,000	10.8
Liverpool	•••	830	8,000	7.2
Leeds	1767	330	3,000	70
Birmingham	1778	800	2,700	8.0
Glasgow	1794	630	5,700	10.7
Misericordia (Dublin)	1855	230	2,100	6.2
London (Whitechapel)	•••	790	7,170	•••

Death-rate averages  $6\frac{1}{2}$  per cent. in Irish hospitals, 8 in English, and  $9\frac{1}{2}$  per cent. in Scotch. There are in the United Kingdom 496 hospitals, with 16,400 beds, relieving 145,000 sick yearly, who are attended by 820 physicians. Total expenditure £1,200,000, or £8 per patient, equal to 5 shillings a day for each bed occupied. Death-rate is lowest in small hospitals, viz.:—

Less than 100 beds			6.5
100 to 200 beds			7 · 1
Over 200 beds	_		8.0

In the year 1800 there were but 51 hospitals in Great Britain and Ireland.



### HOSPITALS.

234

The London Charities report for 1881 showed that the city hospitals received £503,000, being 82 in number. This is equal to a subsidy of 3 shillings per inhabitant annually to the hospitals, as compared with other cities in Table A.

#### C .- BRITISH AND FRENCH HOSPITALS COMPARED.

	British.	French.
Number of beds .	16,400	72,100
Admission	145,000	438,000
Expenditure	£1,200,000	£2,482,000
Number of physicians	820	1,832
Beds, per physicians .	20	40
Daily cost per bed, pence	56	38

#### The average of days to each patient are :-

Dublin		27	Glasgow			80	All England	31
Paris .		28	Guy's .		•	35	All France .	35

The average death-rate on the Continent is 13 per cent.

#### D.—New York Hospitals (1882).

Subsidies Pay patients			Revenues. £34,000 16,000	Free . Pay			Patients. 6,945 2,220
Donations	•	•	38,000	Total .			9,165
Receipts	•	•	£88,000	Days free			262,000
Expenditure			£92,000	Total days	:	:	368,000

The average was 37 days to each free, and 48 to each paying patient, and the cost in general £10 per patient, or 5 shillings per day, which exceeds the averages above given in Table C.

#### E.-Hospitals compared with Population.

					Admitted to Hospital.	Admissions, per 1000 Inhab.
United Kingdom					145,000	4
France					438,000	12
Spain .				•	243,000	15
New York		_	_		9.200	8

See Sickness.

235

#### HOUSES.

## HOUSES.

## A .- Houses and Value.

	Houses, Thousands.	Value, Millions &	Average per House.	Do, per Inhab,	Inhab. per House.
United Kingdom .	6,452	2,280	£352	£65	5.4
France	8,813	1.890	213	50	4.3
Germany	5,770	1,470	255	83	7.7
Russia	9.150	880	96	11	9.1
Austria	6,290	770	124	21	5.9
Italy	4.420	656	143	23	6.3
Spain and Portugal	8,810	420	111	21	5.4
Belgium	1.060	140	132	25	5.1
Holland	720	116	155	29	5.5
Scandinavia	1,200	180	109	18	6.9
Europe	47,685	8,752	£185	£29	6.8
United States	8,956	2,780	311	53	5.6
Total	56,641	11,532	£203	£52	6.6

The above table is not official.

#### B .- House-property, Urban and Rural.

	Value, M	illions£.	Ra	Ratio. House			Value per Inhab.	
	Urban.	Rural.	Urban.	Rural.	Urban.	Rural.	General	
U. Kingdom .	1,206	1,074	53	47	£89	£48	£65	
France	502	1,388	26	74	71	44	50	
Germany	830	1,140	22	78	45	30	33	
Russia ?	120	760	14	86	24	9	11	
Austria?	140	630	18	82	56	18	21	
Italy?	202	454	30	70	44	18	23	
Spain & Port. ?	97	323	23	77	41	18	21	
Belgium	58	. 87	38	62	36	22	25	
Holland	48	68	41	59	42	24	29	
Scandinavia .	84	96	26	74	41	12	18	
Europe	2.732	6,020	31	69	£56	£22	£29	

The above table is not official.

## C .- VALUE OF HOUSES BUILT PER ANNUM

٠.	TALIUS US	TIOODE	D Down I I I I I I I I I I I I I I I I I I I	
		Shillings		Shillings
	Amount	per Inhab.	Amount.	per Inhab.
Belgium	£4,900,000	15	New York . £5,600,000	88
Buenos Ayres	720,000	61	Montevideo 230,000	39
France	<b>32,600,000</b>	17	Toronto . 320,000	69
Glasgow	1,630,000	52	Turin 250,000	22
London	15,800,000	77	U. Kingdom 68,000,000	39

## D.-Houses in Great Britain (without Ireland).

Year.		Houses in	Thousands.	Rental.	Rent	Rent	
		Number.	Increase from 1821.	Millions &	per House.	per Inhab	
1821		•	2,293		19-4	£8·4	£1.4
1831			2,695	402	27.1	10-0	17
1841			3,257	964	88.5	11.8	21
1851			8,648	1,855	44.8	12·1	2-2
1861			4,189	1,846	58-2	14-0	2.5
1871			4,672	2,879	74.5	16-0	2.9
1881			5,475	8,182	114-2	21-0	8.8

House-property has apparently risen in value faster in London than throughout England. There is a house in Lombard Street, the rent of which was £25 a year in 1665, and the building on the same site is now rented for £2600 a year, under lease from 1877.

#### E.—CLASSIFICATION IN GREAT BRITAIN (1881).

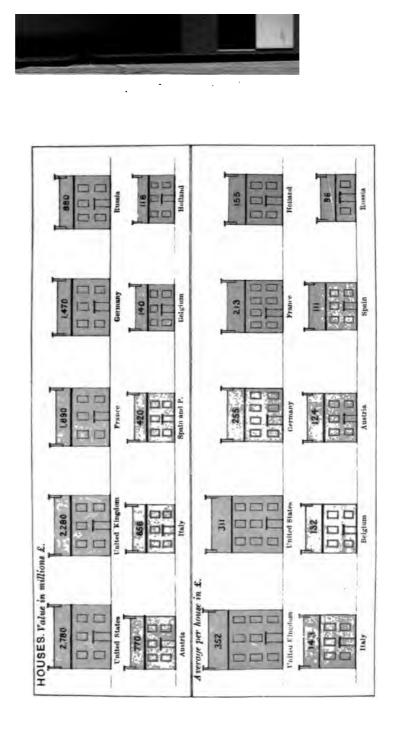
Class.	Houses, Thousands.	Rental, Millions &.	Average Rental.	Ratio of Houses,
1	21	14.0	£665	0.4
2	238	28 <b>·5</b>	120	4.3
8	512	17.9	35	9.3
4	1,294	19· <del>4</del>	15	28.4
5	8,410	34.4	10	62 <del>6</del>
Total	. 5,475	114-2	£21	100.0

## F.—House-property of United Kingdom (1883).

		T7		
London .		Rental. 31.6	Capital Value. 620	House-prop per Inhab. £158
Provinces		73.4	1,387	66
Scotland		11.8	213	60
Ireland .	•	8.3	60	12
Total		120.1	2,280	£65

The increase in the value of house-property varies from 50 to 70 millions sterling per annum, that is, on an average, 35 per cent. of the increase of national wealth. It is not merely the number of houses growing faster than population, but also a higher ratio of those paying house-duty, viz.:—

Year.		Subject to House-duty.	Ratio to Total Number.
1851		434,000	12 per cent,
1871		797,000	17 ,
<b>2881</b>		1,002,000	18 "





#### HOUSES.

The average value per house in Great Britain has risen from £216 in 1851 to £380 in 1881; this is not including Ireland.

## G.—Houses of Great Britain in 1812 (Colqueoun).

			Number.		
Rental.		Urban.	Rural	Total.	Value (Millions £.)
Over £100 .		6,500	500	7,000	18
£40 to £100.		30,000	6,000	36,000	41
£20 to £40 .		100,000	20,000	120,000	72
£10 to £20 .		200,000	100,000	300,000	89
Under £10 .		579,000	995,000	1,574,000	110
Total .		915,500	1,121,500	2,037,000	880

#### H.—Houses of United Kingdom in 1832.

			Number.	Aggregate Rental.	Value (Millions &),	Ratio.
Over £40			84,400	£5,100,000	97	17
£20 to £40			130,400	4,150,000	80	14
£10 to £20			229,600	5,200,000	99	17
Under £10	•	<b>3,788,0</b> 00	15,350,000	295	52	
			4,232,400	29,800,000	571	100

## L-Houses of England and Wales in 1862.

Annual Rental	Number.	Aggregate Rental	Value	Ratio.
Over £1,000 .	233	£440,000	8	0.7
£500 to £1,000	924	650,000	12	1.1
£200 to £500 .	8,633	2,860,000	51	4.5
£100 to £200 .	82,806	4,830,000	86	7.6
£50 to £100 .	101,948	7,120,000	128	11.3
£30 to £50	169,920	6,880,000	124	11.0
£20 to £30	205,528	5,110,000	92	8· <b>3</b>
Under £20	3,624,608	34,700,000	626	55.2
Total	4,144,600	62,590,000	1,127	1000

#### K .- House-Valuation in Cities.

London	Millions &. 620	Per Inhab. £158	New York	Millions &. 224	Per Inhab.
Paris	286	130	Rome	14	48
Liverpool .	66	120	Sheffield .	18	63
Manchester .	62	109	Buda	44	120
Glasgow	54	106	Bristol	16	7 <b>7</b>
Birmingham	28	70	Turin	10	52
Newcastle .	14	97	Milan	13	41
Brighton	12	96	Sydney .	15	140
Leeds	22	71	Melbourne	10	140

Sydney and Melbourne do not include the suburbs, in which the bulk of population resides.

## L.—Houses in France.

Year.			Houses,	Windows per House.	Inhabitants per House.
1836			6,805,000	4.5	4-98
1852		•	7,524,000	5-0	4.77
1882	•	•	8,818,000	5.6	4.28

This shows that the houses have improved 25 per cent. as regards the number of windows, and the population have 15 per cent. more houses per 1000 inhabitants than they had 50 years ago. The classification of houses in 1868 was as follows:—

Class.				Houses.	Ratio.
Gentry				158,000	2-2
Commercial, &c.				583,000	7-9
Tradesmen .				2,167,000	29.4
Operatives, &c.	•	•	•	4,458,000	60.5
Total .				7.861.000	100-0

## M.—Houses in Paris (1882).

Rent.	Number.	Rental.	Value (Millions £.)	Ratio.
Over £500 .	1,920	£1,100,000	17	6.0
£160 to £500	13,100	4,200,000	68	<b>2</b> 2·0
£40 to £160.	65,250	6,300,000	94	32.7
£15 to £40 .	135,400	2,800,000	42	14.8
Under £15 .	469,000	4,700,000	70	24-5
Total	684,670	£19,100,000	286	160-0

The above shows the "logements" or tenancies, but the actual number of houses is less than half. The official valuation deducts 25 per cent. from the above for repairs, &c.

#### N .- GROWTH OF HOUSE-PROPERTY IN PARIS.

Year.		)	tillions &.	Per Inhab.
1848			81	£82
1860			188	109
1870			223	122
1882			<b>286</b>	128

### O .- Houses in United States.

Relative Increase,

				30 Y	CATE.
Year.		Houses.	Inhabitant, per House.	Houses.	Popula-
1850		3,362,000	6.9	10 <b>0</b>	100
1860		4,970,000	6.3	150	135
1870		7,043,000	5.2	211	166
1880		8,956,000	5.6	270	218

## HUNGER AND WANT.—Deaths recorded in 1879 from this cause were:—

		Number.	Per 1,000 Deaths.
London		101	1.2
England		312	0.6
Ireland		<b>8,</b> 789	87:6
France		260	0.8

In England there were 60 male to 40 female victims; in France 85 to 15. In London the real number of victims was much greater, many of the suicides resulting from hunger.

**HUNTING IN FRANCE.**—The number of licenses compares with population thus:—

· Year.	Licenses.	Per 1.000 Inhabitants,
1846	145,000	4.1
1859	249,000	6-9
1869	<b>828</b> ,000	8.6
1879	847,000	9-2

See Wild Beasts.

#### Ι

ICE.—Norway exports 160,000 tons yearly, valued at 7 shillings per ton, mostly for England. Lake Wenham, in the United States, produces 300,000 tons, of which one-fourth is shipped from Boston for Europe, valued at 12 shillings per ton. Ice is 17 per cent. heavier than water.

#### ILLEGITIMACY.

#### A.—Percentage of Illegitimate Births.

England		4.5	Austria 12.9   Denmarl	ι	11.2
			Italy 6.8 Sweden		
Ireland		2.3	Switzerland . 4.6 Norway		8.5
France		7.2	Spain & Portugal 5.5 Greece.		1.6
Germany		8.4	Belgium 7.0 United S	States	7.0
Russia .		3.1	Holland 3.5 Canada		5.0

#### B.—England and France Compared.

Years.	England,	France.
1841-50	6.7	7.2
1851-60	6.5	7:4
1861-70	6.1	7.5
1871-80	5.1	7.8

IMMIGRATION.—The Australian colonies have expended 8½ millions in promoting immigration, viz.:—

New Zealand Victoria Queensland, &c. &c.	Expended. £1,950,000 2,880,000 8,600,000	Immigrants. 101,000 167,000 202,000	Per Head. £19 17 18
	£8,430,000	470,000	£18

The value of an able-bodied immigrant, male or female, is estimated by Engel at £200, in the United States at £166, by Dr. Farr at £246, in Buenos Ayres at £240, and in Australia at £260. Each immigrant, big and little, increases the Australian revenue by £4 a year, equal to £10 a year for those between 20 and 60 years of age. See Emigration.

#### IMPORTS.

## A.—Value of Net Imports (1881-82).

	M	illions £.	Per Inhab.   Snillings.	Millions &	Per Inhah. Shillings.
U. Kingdom	١.	348	196	Scandinavia 36	84
France		199	104	U. States . 151	55
Germany .		148	65	India 38	4
Russia		62	14	Egypt 7	30
Austria		64	33	China 25	2
Italy		53	86	Japan 8	5
Spain		20	25	Australia 63	420
Portugal .		8	35	Canada 25	110
Belgium .		67	246	S. America 42	31
Holland .	•	76	875	S. Africa . 9	166

#### B.—British Imports, Progress of.

Year,	Reign.	Thou-	Per Inhab, Sbil.	Year.	Reign.	Thou-	Peri Inhab, Shil
1355	Edward III.	120	1	1801	George III.	31,420	40
1573	Elizabeth .	2,100	9	1820	George IV.	86,515	35
1614	James I	2,140	8	1835	William IV.	48,912	38
1687	James IL .	4,200	15	1840	Victoria	52,000	39
1713	Anne	6,850	24	1850	**	95,000	69
1750	George II	7,290	21	1860	"	182,000	125
1761	George III.	10,292	28	1870	"	259,000	167
1775	,,	14,816	37	1882	"	848,000	

The amounts above are according to the value in weight of silver. They stand for England and Wales down to 1800, and afterwards for the United Kingdom. They are net imports, exclusive of goods in transit.



## IMPORTS:

## 241

## C.—British Imports, Value.

	Gross In	aports (Mi	llions £).	Consum	ption (Mil	lions £)
	1960.	1870.	1880.	1860.	1870.	1880.
Cotton	85.8	58.5	42.8	80-4	45.4	87.8
Wool	11-0	15.8	26.4	8.7	10.2	12.0
Silk	9-9	8.2	3.1	6.5	4.8	2.4
Flaz, &c	5-6	10.4	10.1	5.5	9.7	8.7
Grain	32.8	86.7	69.5	82.0	84.6	66.8
Mest	8.9	77	26.5	3-9	7.7	26.5
Butter, &c.	6.8	11.9	21.2	6.8	11.9	21-2
Sugar	12.8	17.6	23.0	12.4	17:1	22.4
Tea &c	9-7	15.4	19.3	7.5	9.2	10-9
Wines	6.2	8.0	8.6	4.7	7.1	7.4
Timber	10.7	13-2	16.8	10.7	13-2	16.8
Manufactures .	6.4	26.5	33.7	6.0	26.0	821
Sundries	. 59.4	78.1	110-0	46.9	62.1	881
Total .	211.0	808-0	411-0	182-0	259.0	848-0

## D.—British Imports, Quantities Consumed.

		Millions.		Per	Inhabits	mŁ
	1860.	1870.	1880.	1860.	1870.	1880.
Cotton, lbs	1,141	1,101	1.404	39	35	40
Wool ,,	118	171	226	4	6	7
Meat ,	36	184	840	1 1	5	24
Butter "	97	180	258	3	4	8
Cheese ,	67	116	198	2	4	6
Coffee ,,	35	31	32	1	1	1
Tea ,,	78	118	160	3	4	5
Sugar "	980	1,460	2,220	34	47	63
Rice "	42	210	510	1	7	14
Tobacco "	35	40	50	1.2	1.3	1.
Eggs, No	173	420	770	6	14	22
Wine, gallons .	7	15	16	0-2	0.5	0.
Grain, bushels .	58	140	265	2	5	8

	Val	ue (Millior	18 £).	i	Ratio.	
	1860.	1870.	1880.	1860.	1870.	1880.
Food	67:3	87.6	155.2	37-0	33.8	44.6
Fibres	51.1	70.1	60.4	28.1	27.1	17.8
Manufactures .	6.0	26.0	32.6	3.3	10.0	9.3
Sundries	57-6	75.3	99.8	31.6	29.1	28.8
Total	182.0	259.0	848.0	1000	100-0	100.0



### 242

## IMPORTS.

## E.—BRITISH IMPORTS, WHERE FROM.

	Gross I	mports (Mi	lions £).	Re	tio.
From	1860.	1870.	1880.	1870.	1880.
France	18	38	43	12.5	10.2
Germany	15	15	24	5.0	5.8
Russia	16	20	16	6.6	8.9
Italy	8	4	8	1.3	0.7
Spain & Portugal.	6	9	14	3.0	8.4
Holland	8	14	26	4.6	6.3
Belgium	4	11	11	8.6	2.7
Scandinavia	7	12	16	4.0	8-9
Europe	77	123	158	40.6	87-2
United States	45	50	107	16.5	26.0
South America .	10	20	17	6.6	4.1
China and Japan .	9	10	12	8.3	2-9
Turkey and Egypt	16	21	13	7-0	3.1
British Colonies .	43	65	93	21.5	22.7
Various	11	14	16	4.2	4.0
Total	211	303	411	100.0	100 0

## F.—IMPORTS INTO FRANCE.

	Value	in £ (Thousa	nds Omitted	), Annual A	verage.
	1561-65.	1866-70.	1871-75.	1876-80.	1882
Grain	5,100	7,600	10,400	21,200	21,000
Wool	8,200	8,800	12,600	12,700	12,800
Silk	10,400	14,300	14,800	14,100	13,800
Timber	5,400	7,000	5,600	9,100	7,800
Raw cotton .	10,400	12,100	8,800	8,200	8,400
Cattle	2,900	4,700	5,600	7,600	6,800
Wine			800	4,400	14,100
Coal	4,400	5,200	6,900	6,300	7,200
Hides	3,600	4,900	6,400	6,400	6,700
Sugar	5,100	4,500	4,200	4,200	5,700
Sundries	42,600	53,100	65,700	78,200	94,700
Total	98,100	122,200	141,800	172,400	199,000

## G.—Imports into Germany.

## Value, Annual Average, 1876-80 (Thousands Omitted).

Grain		£29,200	Yarus			£7,600
Wool		10,800	Silk			5,500
Cotton		9,700	Hides			4,200
Coffee		9,100	Sundries			99,700
	ff: 4-1	*		 75 00	•	

## H .- IMPORTS INTO ITALY.

	Value in £	(Thousand	s Omitted).	Pence,	per Inh	abitant.
	1862.	1870.	1880.	1862.	1870.	1880.
Raw cotton .	. 800	1,400	8,300	3	13	28
Grain	. 3,100	8,200	2,800	84	80	24
Coal	. 700	1,500	2,300	8	14	21
Silk, raw	4,100	1,300	2,100	45	12	19
Wool	. 500	500	1,200	5	4	11
Sundries	24,500	27,900	35,500	270	260	802
Total .	33,200	35,800	47,200	365	333	405

## I.—Imports into Spain.

	Value	in & (Thousa	nds Omitted	), Annual A	verage.
	1861-65.	1866-70.	1871-75.	1876-80.	1880.
Raw cotton .	900	1,400	3,100	2,800	3,000
Dry goods .	2,700	2,200	2,100	2,600	2,500
Timber	400	400	800	1,000	1,100
Machinery .	300	200	300	700	1,000
Cod-fish	500	500	700	700	800
Coal	800	400	700	800	900
Sundries	10,500	12,000	10,700	10,000	9,600
Total !	15,600	17,100	18,400	18,600	18,900

## K .- IMPORTS INTO BELGIUM.

	Value in	& (Thousand	omitted).	Shilli	ngs per	Inhab.
	1860.	1870.	1880.	1860.	1870.	1880.
Grain	2,800	3,600	13,400	11	14	48
Wool	2,100	3,500	7,400	9	14	27
Meat	700	1,300	4,900	3	5	18
Flax	700	2,600	4,000	3	11	15
Iron	400	900	1,000	2	4	4
Timber	600	800	2,100	3	8	8
Raw cotton	800	1,400	1,700	3	6	6
Sundries	12,600	22,700	32,700	52	90	118
Total .	20,700	86,800	67,200	86	147	244



#### 244 IMPORTS—IMPROVEMENTS.

#### L-IMPORTS INTO HOLLAND.

	Value in	& (Thousands	Omitted).	Shilli	ngs per	nbab.
	1861.	1870.	1880.	1861.	1870.	1880.
Grain	8.100	8,800	8,400	19	18	42
Iron	900	1,400	5.800	5	8	29
Coffee	2,700	8,600	3,600	16	20	18
Sugar	2,500	3,600	2,800	15	20	14
Raw cotton.	1,600	1,800	2,300	10	10	12
Tallow	200	400	2,300	1	2	12
Rice	1,200	1,000	1,900	7	6	9
Sundries	15,000	23,700	41,900	90	130	210
Total .	27,200	88,800	69,000	163	214	346

#### M .- IMPORTS INTO RUSSIA.

		At	nual Avers	ge (Thousa	nds Omitte	d).
		1861-65.	1866-70.	1871-75.	1876-80.	1880.
Cotton, cwts.		390	820	1,280	1,560	1,610
Coal, tons .		610	740	1,060	1,640	1,990
Iron, ,, .		20	184	302	36 <b>6</b>	396
Tea, cwts		88	157	243	220	320
Coffee, cwts.		116	125	146	135	160
Rice, ,,		80	98	160	151	310

#### N .- IMPORTS INTO UNITED STATES.

		Value (i	n Gold)	Millions 8	sterling.		Ratio
Year.	Dry Goods.	Hard- ware.	Sugar.	Tea and Coffee.	Sun- dries.	Total.	per Inhab. Shillings
1821	5	+	1	1	11	9	18
1831	9	1 🖟	11	11/2	3 🖁	17	27
1841	10	1	21	3	7 🖟	24	28
1851	16	3	81	31	16	42	33
1861	18	4	61	6	221	57	35
1871	26	9	14	9	37	95	1 47
1881	26	11	18	16	59	130	50

#### IMPROVEMENTS.

Baron Haussman rebuilt a great portion of Paris in the years 1853 to 1869, at an outlay of 85 millions sterling.

Annual earnings, in millions & United States 1.420	Average per inhabitant, E per an. Australia 44
United Kingdom 1,247	United Kingdom 35
France 965	United States 27
бетнаку 850	Canada 27
Russia 848	Argentine Republic 27
Austria 602	France 26
thaly 345	Holland 26
Spain 218	Pelefum 22
Australia 133	Germany 19
Balgium 120	Austria 16
Capada 118	Sweden 16
Bolband 104	Spain 14
Sweden & N. 104	Italy 12
Argent, Repub. 61	Knowla IC



#### INCOME.

#### INCOME.

#### A.—GROSS EARNINGS OF NATIONS.

	<u> </u>	illions Sterlin	g.	<b></b>
	Agriculture.	Other Industries,	Total.	Ratio per Inhabitant.
United Kingdom .	266	981	1,247	£35·2
France	444	521	965	25.7
Germany	456	894	850	18-7
Russia	509	839	848	9.9
Austria	822	280	602	16.3
Italy	178	167	845	12.0
Spain	186	82	218	13.8
Portugal	81	80	61	13.6
Belgium	45	75	120	22.1
Holland	45	59	104	26.0
Denmark	87	10	47	23.2
Sweden & Norway	71	88	104	16.2
Switzerland	18	26	44	16.0
Greece	10	13	28	11.8
Europe	2,568	8,010	5,578	18.0
United States	604	816	1,420	27.2
Canada	58	60	<b>118</b>	26.9
Australia	76	57	133	43.4
The World	3,306	3,943	7,249	19.6

Agriculture includes not only tillage, but also pastoral farming and forestry. The table is not official.

## B.—BRITISH INCOME AT VARIOUS DATES.

Year.	Millions &	Per Inhab.	Kingdom.
1664	42	£7·8	England and Wales.
1688	45	8-2	,,
1770	122	16.3	**
1806	170	15-2	Great Britain.
1822	280	19.8	
1840	540	20.6	United Kingdom.
1860	760	26.2	•
1882	1.247	85·2	**
1002	-,		**

#### C .- French Income at Various Dates.

Year.	Millions &.	Per Inhab.	Pop. (Millions).
1780	160	£6·1	• `26·3
1800	216	7.7	27.4
1820	815	10.4	30.3
1840	480	14.1	84.0
1868	806	21.6	87·5
1882	965	25.7	87.6



#### 246

### INCOME-TAX.

#### D.—Income of British People.

	A.D.	1688.	A.D.	1800.	A.D. 1883.		
Class.	Families, Number.	Earnings (Mill. £).	Families, Number.	Earnings (Mill. £).	Families, Number.	Earnings (Mill. 2).	
Gentry	16,500	6	36,000	28	222,000	833	
Middle .	114,000	12	181,000	57	604,000	241	
Trades .	310,000	16	446,000	67	1,220,000	244	
Working	759,500	11	1,117,000	78	4,629,000	447	
Total .	1,200,000	45	1,780,000	230	6,675,000	1,265	

#### E.—EARNINGS OF BRITISH NATION IN 1882.

England .			Millions &. 1,048	Per Inhab. £41	Ratio. 84-0
Scotland . Ireland .	•		121 78	32 16	9·7 6 3
United K	ingdo	m	1,247	36	100-0

#### INCOME-TAX.

### A.

Years.	Average Rate (Pence).	Annual Product.	Product per Penny.	Product per inhah
1842-51	`7.0 ′	£5,467,000	£782,000	65 pence
1852-61	9.8	10,224,000	1,041,000	89
1862-71	5.2	7,764,000	1,408,000	62 "
1872-81	3.8	7,062,000	1,868,000	52 "
40 years	6.0	7,625,000	1,275,000	66 ,
1881	6.0	10,650,000	1,775,000	73 "

#### B.—Assessments in United Kingdom.

#### Millions &.

Houses		1850. 47	1860 61	1870. 77	1884. 127
Lands	:	56	58	65	65
Professions, &c.	•	171	216	303	437
Total .		274	335	445	629

This includes an estimate of 18½ millions for Ireland in 1850, the tax not being then extensive to that country.

## C.-ALIQUOT PARTS.

Houses .	1850. 17:1	1860. 18:3	1870. 17:3	1884. 20·1
Lands Professions, &c.	20·4 62·5	17·4 64·3	14·6 68·1	10·3 69·6
Total .	100.0	100:0	100:0	100.0



#### INCOME-TAX.

## D.—DISTRIBUTION IN THREE KINGDOMS.

				Millions &.			Per Inhabitant.			
				1860.	1870.	1880.	1860.	1870.	1890.	
England	•		•	282	879	486	£14	£17	£19	
Scotland	•		٠	80	40	56	10	12	15	
Ireland	•	•	•	23	26	36	4	5	7	
United	King	dom	•	835	445	578	£11	14	17	

## E.—RETURNS FOR 1860 AND 1880.

		Millions &.									
	Eng	land.	Scot	Scotland. Ireland.			U. Kingdom.				
	1860.	1880.	1860.	1880.	1860.	1880.	1860.	1890.			
Houses	52	98 51	6	11 8	3 9	3 10	61 58	112 69			
Railways . Professions .	12 175	26 311	16	33	10	1 22	15 201	31 366			
Total	282	486	30	56	23	36	335	578			

## F.—Relative Increase since 1850.

		1850.	1860.	187 <b>0</b> .	1880.
Houses		100	130	164	238
Lands .		100	104	116	123
Railways		100	143	228	295
Professions		100	125	174	228
Total .		100	122	162	211

## G .- RELATIVE VALUE OF THE THREE KINGDOMS.

England Scotland Ireland	:	:	1850. 85·0 8·4 6·6	1860. 84·1 9·0 6·9	1870. 85·2 9·0 5·8	1880. 84·2 9·6 6·2
United I	Zingd	om	100.0	100.0	100.0	100.0

## H.—CLASSIFICATION OF INCOMES IN 1877.

Income. Over £50,000	England.	Scotland. 15	Ireland.	U. Kingdom. 90
£10,000 to £50,000	904	132	31	1,067
£1,000 to £10,000.	18,622	<b>2,</b> 19 <b>1</b>	878	21,691
£150 to £1.000.	275.733	27.642	14.473	317.848

For previous years, see page 28.



#### 248 INDIARUBBER—INDIANS.

#### L-Assessments of Income in Italy.

Cities.				Classes.			
Florence			£3,415,000	Over £200 .			8,120
Milan .			2,420,000	£80 to £200			22,300
Rome .			2,060,000	£40 to £80.	•		49,600
Naples .			1,240,000	£20 to £40 .		-	114,240
Turin .			1,220,000	£12 to £20.	·		135,300
Genoa .			1,210,000	Under £12.	-		311,400
Various			16,865,000		•		
	•			Total .	_	_	641,160
Total	_	_	£28,430,000		•	•	002,200

INDIABUBBER.—This is mostly obtained from the Seringueros of the Amazon, who sell it for sixpence a pound to the merchants of Para, but its value on reaching England or United States is over two shillings a pound. The quantities imported into Great Britain and United States have been as follows:—

•			Tons Imported.						
Into			1860.	1870.	1880.				
Great Britain United States .	:	:	2,150 1,610	7,606 4,316	8,479 7,529				
Total			3,760	11,922	16,008				
Value per ton .	•		£224	£215	£277				

The best rubber-forests in Brazil will ultimately be exhausted, owing to the reckless mode followed by the Seringueros or tappers. The ordinary product of a tapper's work is from 10 to 16 lbs. daily. There are 120 indiarubber manufacturers in the United States, employing 15,000 operatives, who produce 280,000 tons of goods, valued at 52 millions sterling, per annum.

#### INDIANS.

#### A .- Principal Tribes in United States.

Cherokees, Choctaws	47,800	Crow, Flathead		19,400					
Esquimaux, &c	62,400	Pawnee, Fox		18,100					
Shoshones, Snakes	25,300	Apaches, Navajas		20,100					
Dacotah, Sioux	28,100	Oregon, Arizona, &c		111,000					
Torat									

332,100

## B.—Indians Paying Taxes (United States).

					.,.
			1870.	1880.	Increase.
			7,241	16,277	9,036
			1,309	9.772	8,463
			4,926	7,249	2,323
Terri	tory	•	1,319	4,405	3,086
	-		81	8.493	8,462
			1.206	3.161	1,955
•	•	•	9,699	22,050	12,851
Tota	1		25,731	66,407	40,676
	· ·	Territory	Territory .	7,241 1,309 4,926 Territory 1,319 1,206 9,699	. 7,241 16,277 1,309 9,772 . 4,926 7,249 Territory 1,319 4,405 . 31 3,493 . 1,206 3,161 . 9,699 22,050

## C.-Industry, Schools, &c., of Indians.

Population Acres tilled Grain, busi Hay, tons Vegetables Churches	i hels		•	Civilised. 104,800 278,000 2,780,000 177,000 8,500 117	Half-Civilised. 144,300 157,000 1,070,000 48,000 9,800	8avage. 83,000  	Total. 382,100 430,000 3,850,000 225,000 18,300 117
Schools Pupils Horses Cows. Sheep Pigs.	•	:	•	30 31 44	344 3,350 1,000 1,000 7,000 4,000		844 13,850 801,000 811,000 447,000 214,000

The number of Indians who vote as American citizens is 24,600. The Indian race has diminished 60,000 since 1836.

#### D.—United States Indians in 1837.

East of Mississ	ippl.	West of M	ississippi.
Cherokees		Blackfeet . 30,000	Choctaws 15,000
Chippewas Senimoles		Sioux 21,600 Creeks 20,437	Pawnees . 12,500 Eutaws . 19,200
Winnebagos			Crows . 7,200
		Camanches 19,200	
Total	49 385	Total	983 197

## E.—Indians in Canada.

Locality.		Population.	Property.	Average, per Head.
Ontario .		16,000	£1,968,000	£128
Quebec .		11,000	363,000	33
Manitoba, &c.	•	75,400	·´	
				<del></del> -
Total .		10 <b>2,400</b>	•••	•••

INDUSTRIAL SCHOOLS.—See Reformatories.



## INDUSTRIES—INFANTS.

#### INDUSTRIES.

250

	Value in Millions 2.								
	Agricul- ture.	Manu- facture.	Com- merce.	Trans- port.	Total.	per Inhab,			
U. Kingdom .	266	818	570	186	1,840	£52			
France	444	494	840	90	1,368	36			
Germany	456	449	815	110	1,830	30			
Russia	509	238	120	63	930	12			
Austria	322	210	128	44	704	19			
Italy	178	117	96	18	409	15			
Spain	186	96	41	14	287	18			
Portugal	31	20	13	3	67	16			
Belgium	45	92	116	11	264	48			
Holland	45	40	121	6	212	53			
Denmark	37	16	19	3	75	38			
Swed. and Nor.	71	87	86	14	158	24			
Europe	2,540	2,627	1,915	562	7,644	25			
United States .	604	1,112	313	252	2,281	44			
Canada	58	52	46	11	167	38			
Argent. Repub.	42	11	21	4	78	80			
Australia	76	26	101	9	212	71			
Total	3,320	3,828	2,396	838	10,382	29			

In the above table manufactures includes mining. For numbers employed see Occupations. The table is not official. See Work.

#### INFANTS.

#### A.—RATIO OF POPULATION UNDER 5 YEARS OF AGE.

	Per 100   Inhab.		Per 100   Inhab.		Per 100 Inbab.
England	13.5	Austria .	13.2	Sweden .	126
Scotland	13.0	Italy	13.8	Norway .	13.5
Ireland	11.1	Spain	14.2	Greece .	
U. Kingdom .	13.3	Holland .	11.8	Brazil .	10.8
France	9.8	Belgium.	12.1	U. States	14.3
Germany	12.7	Denmark		London .	

#### B.—Death-rate per 1000 under 5 Years: per Annum.

England							
United States	59						
France	76	Spain.		106	Medium		82

#### C .- DEATH-RATE OF INFANTS UNDER 12 MONTHS.

	Per Cent.	Per Cent.			Per Cent.
England	15	Russia 27   It.	aly .		22
Scotland	12	Austria 25 Be	elgium		15
Ireland	11	Wurtemburg. 32   H	olland		20
United States	17	Saxony 26 De	enmark		14
France	16	Bavaria 31 Sv	veden		14
Prussia	21	Spain 19   No	orway		11

The highest death-rate of infants in the world is at Liverpool, where 46 of every 100 born die before reaching 12 months. The rate at New York is 31 per cent.

## D.—Infant Death-Rate in France.

## Dying under 12 Months of 100 Born.

Males .		17	١	Legitimate	15	Rural .		15
Females		15	1	Bastards .	30	Urban .		18
Total .		16	1	Total	16	Total .		16

INQUESTS. - See Coroners.

#### INSANITY.

#### A .- INSANE OF ALL COUNTRIES.

	Number.	Per 1000 Inhab.	Ratio of Recovery.	Annual Death- rate.	Asylums
	01.000	2.0	Per Cent.	Per Cent,	
England	81,600	3.2	39	10)	- 44
Scotland	11,600	3.2	42	8	81
Ireland	19,500	37	48	8)	
France	93,900	2.5	33	15	110
Germany	108,100	2.4	31	8	130
Russia	80,000	1.1		***	74
Austria	35,000	1.0			28
Italy	44,100	1.6			33
Spain and Portugal	13,000	0.7			11
Belg. and Holland	10,400	1.2	32	14	68
Switzerland	3,100	1.1	***		42
Scandinavia	18,100	2.9		***	27
Europe	518,400	1.6	33	12	604
United States	168,900	3.3	47	10	
Canada	7,300	1.8		***	***
Australia	4,900	1.7	45	7	
Total	695,500	1.9	36	11	

#### B.—Insane of United Kingdom.

		England.	Scotland.	Ireland.	United Kingdom.
Pauper insane . Private " .	:	65,400 16,200	8,000 8,600	12,200 7,800	85,600 27,100
Total		81,600	11,600	19,500	112,700
Lunatics Idiots Unclassified		39,600 29,500 12,500	6,800 4,600 200	9,800 6,700 3,000	56,200 40,800 15,700
Total		81,600	11,600	19,500	112,700

#### C.—Increase of Insanity.

#### Paupers Insane (per Million Inhab.).

Years.	•		England and Wales.	Scotland
1861-65			2,080	2,050
1871-75			2,581	2,290
1850			2,792	2,580

#### D.-Insanity in United States.

Year.	Lunatics.	Idiota.	Total.	Per 1000 Inhab.	Sex Ratio (Percentage of Males).				
			[		Lunatica,	Idiota.	Total.		
1850	15,610	15,790	31,400	1.36	51	60	55		
1860	24,040	18,930	42,970	1.39	49	58	53		
1870	37,430	24,530	61,960	1.61	47	60	53		
1880	91,990	76,890	168,880	3.30	46	60	51		

## E.—RATIO OF SEX.

		Inma	tes of Asy	lums.		Inmates of Asyl				
England Scotland Ireland .	:	Male. 47 48 52	Female. 53 52 48	100 100	France Italy United States	48 56	Female. 52 44 49	Total. 100 100 100		

Even in countries where the number of insane females exceeds that of males, it is found that men are more liable than women to insanity, but die faster. Thus in France there are annually admitted 110 males to 100 females, though the existing number of the latter is greater.

#### INSANITY—INSURANCE.

253

#### F.—Causes of Insanity.

				Cent.			Cent.
Hereditary	•	•	•				. 11
Drink .	•	•	•	. 14	Sickness	•	. 10
Business	•	•	•	. 12	Various	•	. 29

The above result is the medium average arrived at on comparing the returns for England, France, Denmark, and United States.

## G .- Insane according to Locality (Great Britain).

## Pauper Insane per 100,000 Inhabitants.

Shetland		96	Edinburgh		172	Argyll	259
Orkney		107	Sheffield		179	Manchester .	270
Bradford		121	Newcastle		191	Birmingham.	801
Durham		129	Swansea		202	Oxford	812
Cornwall		158	Liverpool		219	Nottingham .	842
Loods .		160	Perth .		233	London	361

#### H.-INSANITY IN FRANCE.

Year.	Number.	Per 1000 Inhab.	Caused by Drink (per Cent.).
1836	<b>27,000</b>	0.80	7
1846	42,400	1.20	8
1856	59,800	1.66	91
1866	90,100	2.38	14
1869	94,800	2.47	15
1879	93,970	2.52	15 ·

#### I.—Insanity in Prussia.

Year.	Male.	Female.	Total.	Per 1000 Inhab.	Ratio of males (per Cent.)
1871	28,002	27,041	55,043	2.21	51
1880	34,809	82,086	66.345	2.43	51

#### INSURANCE.

## A .- LIFE INSURANCE OF NATIONS.

		icies sands).		ount ons £).		rage y (£).	Insurance to Pop. (£).		
	1870.	1880.	1870.	1880.	1870.	1880.	1870.	1880.	
G. Britain .	688	879	338	422	505	460	10.2	12.1	
France	129	208	51	87	395	418	1.4	2.4	
Germany .	456	797	64	127	142	159	1.7	2.9	
Austria	90	170	20	40	220	230	0.7	1-2	
U. States .	748	725	405	312	540	430	10.2	6.1	
Canada	40	48	14	17	350	348	3.8	4.0	
Total .	2,151	2,827	892	1,005	414	355	6.0	5-0	

#### B.—Business Done in 1880.

	Great Britain.	France.	Germany.	United States.
Premium (millions $\mathcal{L}$ ) Rate of premium	13·2 3·15	2·8 3·16	3·4 2·70	12·7 4·00
Policies paid (millions £) . Average number paid Non religion (millions £)	11·2 2·7	1.2 1.3 17.7	1.9 1.5 13.8	 37:5
New policies (millions £). Number issued during 1880.	20·9 44,900	47,800	47,600	123,000

British life companies show assets 130 millions, and total revenue 19½ millions sterling: American companies 84 millions sterling for assets, and 17 millions for revenue.

# C.—LIFE INSURANCE IN FRANCE.

		Annual Average.						
Year	ra,	New Policies.	Millions &.	dillions &. Per Policy.				
1861-70		 12,870	5.1	£396	868			
1871-75		14,900	7.6	511	430			
1876-79		82,025	12-2	384	890			
1880 .		47,800	17.7	872	1.320			

# D.-LIFE INSURANCE IN GERMANY.

Number of policies	1850. 40,900	1860. 129.600	1870. 456,200	1880. <b>7</b> 97.100
Amount, millions £	7.4	21.2	64.0	127:3
Policies paid .	£150,000	£350,000	£1,020,000	£1,870,000
Ratio to insurance	2.0	1.7	1.6	1.5

## E.—FIRE INSURANCE OF NATIONS.

	Amount	Insured.		Annual Fires.		
	Millions &.	Per Inhab.	Ratio of Insurance.	Millions.	Per Inhab. Shillings.	
United Kingdom .	2,738	£78	0.25	9-2	5	
France	4,056	112	0.10	3.1	2	
Germany	3,170	68	0.20	6.4	8	
Russia	180	2	0.20	12-0	8	
Belgium	400	72	0.10	0.5	2	
Scandinavia	115	14	0.27	1.0	8	
United States	1,290	26	0.90	23.0	9	
Canada	140	82	1.10	8.0	15	
Total	12,089	£47	0-27	58-2	5	

---

# F.—FIRE INSURANCE OF UNITED KINGDOM.

			1	Amount (Millions £).						
Year.			England.	Scotland.	Ireland.	United Kingdom.	Per Inhab.			
1801 .	•	•	220	4	9	233	£15			
1810 .			825	12	17	354	20			
1830 .			482	84	19	535	22			
1850 .			680	43	84	757	28			
1868 .			921	99	52	1,072	36			
1882 .			2,855	274	109	2,738	78			

The assets of fire companies in 1881 amounted to 24 millions sterling. The figures for amount insured in 1882 are estimates, the last official returns being for 1868.

# G .- FIRE INSURANCE IN FRANCE.

Year.		Amount	Insured.	Premium	Losses Paid (Thousands £).	
		Millions &.	Per Inhab.	(Thousands £).		
1851		1,318	£41	1,140	560	
1856		1,810	54	1,566	774	
1868		3,092	88	2,440	1,460	
1875		3,190	. 80	3,030	<b>2,39</b> 0	
1881		4,056	112	3,855	2,430	

# H .- FIRE INSURANCE IN GERMANY.

Year.		Amount	Insured.	Premium	Losses Paid
	-	Millions &.	Per Inhab.	(Thousands £).	(Thousands £).
1850		815	£27	1,650	1,200
1860		1,450	40	3,000	2,000
1870		2,030	50	4,160	2,900
1880		8,125	67	6,370	4,400

# L-FIRE INSURANCE IN UNITED STATES.

Year.		Amount	Insured.	Premium	Losses Paid
	Millions &.	Per Inhab.	(Thousands £).	(Thousands E).	
1856		175	£7	1,440	880
1862		865	11	3,100	1,900
1876		1,310	80	11,800	<b>8,80</b> 0
1881		1,290	26	11,630	8,950

# 256 INVESTMENTS OF BRITISH CAPITAL.

#### K.-MARINE INSURANCE.

Lloyd's .					Amount (Millions £). 480	Average Premium per Voyage. 1:2
Hamburg					105	1-2
French mariti	ıne				102	1.2
Various .	•	•	•	•	200	•••
Total			•		887	•••

The loss of sailing vessels averages 4 per cent.; that of steamers,  $2\frac{1}{2}$  per cent. per annum.

#### L.-Hamburg Marine Insurance Company.

Year.			(	Amount Millions £).	Premium per Voyage (Shillings per £100).
1820				11	84
1840				20	80
1860				47	27
1870				65	24
1878				105	23

#### INVESTMENTS OF BRITISH CAPITAL.

				Million	D-44	
National Debt				Capital.	Interest. 23·1	Rate of Interest. 3:0
Railways .	•	•	•	770	83·2	4.3
Banks	:	:	•	270	16.6	6.5
Mines and iron		·	•	215	11.8	5.5
Canals and dock	8			94	8.7	4.0
Gas and water		•		72	5.7	8-0
Telegraphs .				30	1.7	5.7
Insurance .				20	1.2	6.0
Shipping, &c.		•	•	193	9·7	5.0
British .				2,433	106.7	4.4
Colonial loans				148	7:4	5.0
Indian do				154	6-2	4.0
Indian and color	ial	railw	878	186	9.3	5.4
Foreign loans ar	ıd ı	railwa	ys	570	25.7	4.5
Total				3,491	155·3	4.4

In the above table are not included loans on which no interest is received, such as Peruvian, &c. Neither are counted sums on mortgage lent by British capitalists on properties in Australia, Brazil, and other countries. New companies in England absorb about 60 millions per annum. See Joint-stock.

# IRON.

# A.—Increase of Production since 1830. Thousands of Tons.

•	1830,	1850.	1870.	1871-80.	1882.						
Great Britain.	. 682	2,250	5,230	6,620	8,488						
United States	. 165	560	1,580	2,440	4,023						
Germany	. 120	402	1,310	2,020	8,171						
France	. 105	408	1,230	1,410	2,083						
Belgium	. 96	170	260	580	640						
Austria	. 80	140	280	440 '	550						
Russia	. 115	220	360	390	505						
Sweden	. 105	130	800	330	410						
Total	. 1,468	4,280	10,550	14,230	19,820						

# B.—PRODUCTION COMPARED WITH POPULATION.

## Pounds of Pig Iron per Inhabitant.

Great Britain .	1830. 66	1850. 190	1870. 420	1882. 555
United States	28	54	90	196
Germany .	9	26	82	140
France	7	25	83	117
Belgium	60	- 85	115	250
Austria	7	11	17	30
Russia	5	8	11	12
Sweden	80	84	165	190

# C.—Consumption of Pig Iron.

		Thousand	ds of Tons.	Lbs. per Inhabitant.			
	.	1850.	1881.	1850.	1881.		
Great Britain		1,970	6,415	170	420		
United States		560	5,372	55	240		
Germany .		420	2,520	27	126		
France .		450	2,110	27	122		
Belgium .		170	720	85	303		
Austria .		150	520	12	30		
Russia .		300	630	10	18		
Sweden .	•	45	180	30	90		
Total .		4,065	18,467	42	68		

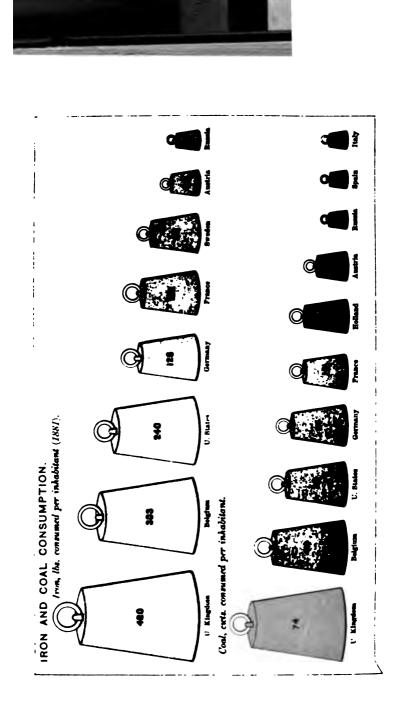
# D.—Uses of British Iron (1881).

Pig iron exported					1,480,000
Made into steel					1,950,000
For various manufactures	•	•		•	4,896,000
Total			•		8,326,000

# IRON.

		<b>511.</b>	
E.—V	ALUE OF IR	ON MANUFACTUR	ED.
Bar of pig iron . Made into horse-shooneedles	£1 es . 2 11	Made into penki	
Visiting cards a iron, viz.:—	are now some	etimes made of v	ery thin sheet
1011, 112.	Per Inch Thick.	1	Per Inch Thick.
Belgian Count Harrach's	400	Baron Krupp's Count Renard's	820
F.—Product	ION IN THE	THREE KINGDO	ıs (1881).
England		Tons I Thousands). po 6,147	Lbs. Pig Iron er Inhabitant. 555
Wales . Scotland		917	1,466 712
Ireland		1,206 56	23
United E	Kingdom	8,326	530
G.—Prices of	Pig Iron i	FOR TEN YEARS	(1870–80).
		Shillings per To	n.,
	Great Bri	tain. Continent.	United States.
Highest .	117	tain. Continent.	United States. 161
Highest . Lowest . Average .		tain. Continent.	United States.
Lowest . Average .	117 48 68	tain. Continent. 140 72 88	United States. 161 70
Lowest . Average .	117 48 68	Continent. 140 72 88	United States. 161 70
Lowest . Average .	117 48 68  H.—YIELD O  Percentag  1   United St	Continent. 140 72 88 F IRONSTONE. se of Iron. ates . 43   Canas	United States. 161 70 116
Lowest . Average	117 48 68 H.—YIELD O	Continent. 140 72 88 F IRONSTONE. 120 140 140 140 140 140 140 140 140 140 14	United States. 161 70 116
Lowest . Average	117 48 68 H.—YIELD O Percentag I United St Australia I Algeria	tain. Continent. 140 72 88  F IRONSTONE. F of Iron. ates . 43   Cana 55   Russi 58   Swed	United States.  161 70 116  da 60 a 44 en 52
Lowest	117 48 68 H.—YIELD O Percentag I United St Australia I Algeria	Continent. 140 72 88 F IRONSTONE. re of Iron. ates . 43   Cana 55   Russi 58   Swed	United States.  161 70 116  da 60 a 44 en 52 tat Britain).
Lowest		Continent. 140 72 88 F IRONSTONE. re of Iron. ates . 43   Canad 55   Russi 58   Swed Pig Iron (Gre	United States.  161 70 116  da 60 a 44 en 52
Lowest . Average		Continent.  140 72 88  F IRONSTONE.  F of Iron.  ates . 43   Cana 55   Russi 58   Swed  Pig Iron (Grid Tons.  Coal. 750	United States.  161 70 116  da 60 a 44 em 52  EAT BRITAIN).  Tons of Coal to 1 Ton of Iron. 60
Lowest . Average		Continent.  140 72 88 F IRONSTONE. re of Iron. ates . 43   Cana 55   Russi 58   Swed  Pig Iron (Gre of Tons.	United States.  161 70 116  da 60 a 44 en 52  LAT BRITAIN).

1,396 5,230 6,365 8,326 4,877 16,220 15,700 18,300 1870 1875 1881 8·1 2·5 2.2 Neilson's invention in 1829 of the hot-blast, 600° Fahrenheit, caused a saving of 33 per cent. in the quantity of coal





. .

.

.

required. Cowper's regenerator of 1500° Fahrenheit, introduced in 1857, caused a further saving. Charcoal is sometimes used, the average requisite to produce a ton of iron being 15 cwt. in Styria, 16 in Sweden, and 23 in United States. The ironworks of the United States consume 680,000 tons of charcoal, equal to 50,000 acres of timber, per annum.

# K.—COAL AND PIG IRON IN 1881.

		Tons			
		Pig Iron.	Coal Raised.	Used for Iron.	of Coal used for Pig Iron.
Great Britain		8,326	154,800	18,300	12
United States		4,160	70,000	9,100	18
Germany .		2,790	59,000	6,200	11
France		1,880	19,000	4,200	22
Belgium .		610	17,000	1,300	8
Austria		520	16,000	1,100	7
Russia		430	8,600	1,000	28
Other countries	•	58 <b>4</b>	9,100	1,300	14
Total		19,300	848,000	42,500	12

#### L.—Total Coal used in Ironworks (Great Britain).

					Tons.
For	pig iron				18,300,000
92	finished iron .				8,043,000
99	Bessemer steel				906,000
**	other steel .				776,000
"	tin plates .				577,000
-	boilers, engines,	&c			1,000,000
	shipbuilding .		•		506,000
99	sundries		•	•	4,655,000
	Total (1881)	١.	_	_	84.763.000

#### M.—Cost of Producing Iron (1883).

		_ 5	amings per Ton.	
		Pig Iron.	Wrought Iron.	Steel.
England	50	122	160	
France .		73	182	224
Germany		59	144	192
Belgium		47	130	131

The above is from a report of French Government to Legislature.

#### N.—Consumers of British Iron.

	To	Lbs. per Inhabitan		
	1872.	1882.	1872.	1882.
United States .	970,000	1,198,000	55	51
Germany	812,000	681,000	44	85
Canada	165,000	247,000	110	122
Australia	95,000	801,000	118	228
Russia	138,000	164,000	4	5
France	108,000	205,000	6	11
Belgium	168,000	86,000	72	41
Italy	20,000	118,000	2	9
Spain	24,000	82,000	8	4
Brazil	21,000	67,000	4	12
Various	867,000	1,256,000		
Total	3,383,000	4,350,000		

#### IRONCLADS. See Navy.

#### IRRIGATION.

France.—Only 260,000 acres irrigated, which yield crops worth £3 per acre more than ordinary.

Italy.—The canals in the Po valley irrigate 1,370,000 acres, which receive every day in summer 45 million tons of water, measured through a great number of little sluicegates: the permanent right to an inch of water is worth from £500 to £800. The usual rent of these lands is £6 per acre per annum.

Belgium.—Since 1859 an area of 160,000 acres of waste lands has been made valuable by irrigation, adjoining state-canals.

Spain.—Land unwatered may be rented at 5 shillings an acre, but the irrigated lands of Valencia, where the old canals and works of the Moors remain, readily rent at £5 per acre. The total area of irrigated lands is 2½ million acres.

Algeria.—The most important work is the "barrage" at Habra, with a basin holding 30 million tons of water, the main wall being 110 feet high and 1500 feet long. The distributory canals are 310 miles, irrigating a large extent of country.

Egypt.—During his reign of 17 years, from 1863 to 1879, Ismael Pacha constructed 112 canals branching from the Nile, to irrigate 1,400,000 acres, with an aggregate length

of 8,400 miles, the cost amounting to about 12 millions sterling. The lands thus newly irrigated produce crops worth £10,600,000, or 22 per cent. of the total value of Egyptian crops. The actual length of Nile canals is 52,000 miles, the task of irrigation employing 476 steam-pumps, 107,000 Persian water-wheels, 150,000 men, and 60,000 animals, at an annual cost averaging 4 shillings per acre.

India.—The Ganges canal irrigates 400,000 acres, is 880 miles long, having 902 bridges and 297 aqueducts, and cost £2,400,000. In the Madras Presidency irrigation is also carefully studied: there are 53,000 tank-reservoirs, 30,000 miles of dykes, the whole having cost 16 millions sterling.

and producing a revenue of £1,500,000 per annum.

Cyprus.—The canals made by the Venetians had fallen to ruin under the Turks, but many of them have been restored by British engineer officers since 1878. Irrigated lands yield three times heavier crops than the rest of the island.

California.—Since 1870 have been constructed 2000 miles of canals, irrigating more than 10 millions of acres.

South America.—The Incas had a perfect network of canals irrigating the lands on the western slope of the Andes. Near Mendoza, at the Eastern foot of the Andes, still exists the Zanjon or canal made by the Cacique Guaymallen, irrigating a tract of 18 miles of country.

IVORY.—An ordinary elephant produces 120 lbs., worth £60. England consumes 650 tons (of which Sheffield one-third), for which it is necessary to kill 12,000 elephants yearly. At the Exhibition of 1851 there was a tusk of 162 lbs., but Gordon Cumming since got one of 173 lbs.

# J

#### JESUITS. -Numbers in 1865. Europe 6,689 475 296 Australia Asia 55 213 Africa Total 7.728 B.—Numbers in 1882. 1,558 | Spain and South America 1,933 2,875 | G. Britain and U. States 1,894 2,789 | Total . . . . . . 11,049 Italy Germany . France and Colonies

# JEWS.

# A.—Numbers and Increase.

Thousands   Russia   2,025   2,621   596		Α	-N	UMBER	S AND INC	CREASE.	
Russia       . 2,025       2,621       596         Austria       . 1,048       1,375       327         Germany       . 393       512       119         France       . 88       . 49          Holland       . 63       . 78       . 15         Great Britain       . 45       . 51       . 6         Italy       . 23       . 35       . 12         Turkey, &c.       . 260       . 280       . 20         Europe       . 3,945       . 5,001       . 1,056         Morocco       . 340       . 350       . 10         Tripoli       . 160       . 170       . 10         Algeria       . 82       . 133       . 51         Egypt       . 7       . 8       . 1         America       . 85       . 110       . 25         Asia       . 200       . 200          Total       . 4,819       5,972       . 1,153         B.—VITAL STATISTICS       (Jewish and European)       Europeans (Per Cent.)         Excess of male births       . 16       5         Illegitimate births       . 2       6					Thou	sands.	
Russia . 2,025				1860.	1	880.	Increase.
Austria 1,048 1,375 327 Germany 393 512 119 France 88 49 Holland 63 78 15 Great Britain 45 51 6 Italy 23 35 12 Turkey, &c. 260 280 20  Europe 3,945 5,001 1,056 Morocco 340 350 10 Tripoli 160 170 10 Algeria 82 133 51 Egypt 7 8 1 America 85 110 25 Asia 200 200  Total 4,819 5,972 1,153 B.—VITAL STATISTICS (JEWISH AND EUROPEAN).  Births.  Excess of male births . 2 6	Russia			2,025	2	621	
Germany         . 393         512         119           France         . 88         49            Holland         . 63         78         15           Great Britain         . 45         51         6           Italy         . 23         35         12           Turkey, &c.         . 260         280         20           Europe         . 3,945         5,001         1,056           Morosco         . 340         350         10           Tripoli         . 160         170         10           Algeria         . 82         133         51           Egypt         . 7         8         1           America         . 85         110         25           Asia         . 200         200            Total         4,819         5,972         1,153           B.—VITAL STATISTICS         (Jewish and Europeans)         Europeans           (Per Cent.)         (Per Cent.)         Furopeans           (Per Cent.)         6         6	Austria			1,048	1	,375	827
Holland . 63 78 15 Great Britain . 45 51 6 Italy . 23 35 12 Turkey, &c. 260 280 20  Europe . 3,945 5,001 1,056 Morocco . 340 350 10 Tripoli . 160 170 10 Algeria . 82 133 51 Egypt . 7 8 1 America . 85 110 25 Asia . 200 200  Total . 4,819 5,972 1,153 B.—VITAL STATISTICS (JEWISH AND EUROPEAN).  Births. Plays (Per Cent.) Excess of male births 2 6	Germany			393			119
Great Britain         45         51         6           Italy         . 23         35         12           Turkey, &c.         . 260         280         20           Europe         . 3,945         5,001         1,056           Morosco         . 340         350         10           Tripoli         . 160         170         10           Algeria         . 82         133         51           Egypt         . 7         8         1           America         . 85         110         25           Asia         . 200         200            Total         4,819         5,972         1,153           B.—VITAL STATISTICS         (Jewish and Europeans).         Europeans (Per Cent.)           Births.         (Per Cent.)         Europeans (Per Cent.)           Excess of male births         . 16         5           Illegitimate births         . 2         6				88	•	49	•••
Italy     . 28     35     12       Turkey, &c.     . 260     280     20       Europe     . 3,945     5,001     1,056       Morocco     . 340     350     10       Tripoli     . 160     170     10       Algeria     . 82     133     51       Egypt     . 7     8     1       America     . 85     110     25       Asia     . 200     200        Total     . 4,819     5,972     1,153       R.—VITAL STATISTICS     (Jewish and Europeans)     Europeans       Births     (Per Cent.)     Europeans       (Per Cent.)     6	Holland			63		78	15
Turkey, &c.       260       280       20         Europe       3,945       5,001       1,056         Morocco       340       350       10         Tripoli       160       170       10         Algeria       82       133       51         Egypt       7       8       1         America       85       110       25         Asia       200       200          Total       4,819       5,972       1,153         B.—VITAL STATISTICS       (Jewish and Europeans).       Europeans (Per Cent.)       Europeans (Per Cent.)         Excess of male births       . 16       5         Illegitimate births       . 2       6	Great Bri	tain		45		51	6
Europe         3,945         5,001         1,056           Morocco         340         350         10           Tripoli         160         170         10           Algeria         82         133         51           Egypt         7         8         1           America         85         110         25           Asia         200         200            Total         4,819         5,972         1,153           B.—VITAL STATISTICS         (Jewish and European),         Europeans (Per Cent.)           Excess of male births          16         5           Illegitimate births          2         6				28		35	12
Europe         3,945         5,001         1,056           Morocco         340         350         10           Tripoli         160         170         10           Algeria         82         133         51           Egypt         7         8         1           America         85         110         25           Asia         200         200            Total         4,819         5,972         1,153           B.—VITAL STATISTICS         (Jewish and European),         Europeans (Per Cent.)           Excess of male births          16         5           Illegitimate births          2         6	Turkey, &	C.		260		280	20
Morocco         . 340         350         10           Tripoli         . 160         170         10           Algeria         . 82         133         51           Egypt         . 7         8         1           America         . 85         110         25           Asia         . 200         200            Total         . 4,819         5,972         1,153           B.—VITAL STATISTICS         (Jewish and Europeans, (Per Cent.)         Europeans, (Per Cent.)           Excess of male births         . 16         5           Illegitimate births         . 2         6	•.				-	<del></del>	
Tripoli       . 160       170       10         Algeria       . 82       133       51         Egypt       . 7       8       1         America       . 85       110       25         Asia       . 200       200          Total       . 4,819       5,972       1,153         B.—VITAL STATISTICS       (Jewish and Europeans).         Births.       (Per Cent.)       Europeans (Per Cent.)         Excess of male births       . 16       5         Illegitimate births       . 2       6	Europe			8,945	5	,001	1,056
Algeria . 82 133 51 Egypt . 7 8 1 America . 85 110 25 Asia . 200 200  Total . 4,819 5,972 1,153  B.—VITAL STATISTICS (JEWISH AND EUROPEAN).  Births. (Per Cent.) Europeans (Per Cent.)  Excess of male births 16 5 Illegitimate births 2 6	Morocco			340		850	10
Egypt	Tripoli			160		170	10
Egypt	Algeria			82		133	51
America	Egypt			7		8	1
Total 4,819 5,972 1,153  B.—VITAL STATISTICS (JEWISH AND EUROPEAN).  Births. Jows (Per Cent.) Europeans (Per Cent.)  Excess of male births 16 5  Illegitimate births 2 6				85		110	25
B.—VITAL STATISTICS (JEWISH AND EUROPEAN).  Births.  (Per Cent.)  Excess of male births 16 5  Illegitimate births 2 6	Asia .	•	•	200		200	•••
Births.  Excess of male births	Total	•		4,819	5	,972	1,153
Excess of male births 16 5 Illegitimate births 2 6	R-VITA	AL S	TAT	ISTICS	(Jewish	and E	JROPEAN).
Excess of male births 16 5 Illegitimate births 2 6	Bir	ths.					Europeans (Per Cent.)
Illegitimate births 2 6	Excess of	male	bir	the		,	
							6
			•			<b>}</b>	41

				1		Mar <del>ry</del> iı	g Age.	
	Age	э.			Je	ws.	Euro	peans.
					Mules.	Females.	Males.	Females.
Under 20		•		_	2-2	23.5	1.8	12:1
20 to 30					66.4	58.5	62.6	65.6
30 to 40					17.4	9.8	25.3	16-2
40 to 50					7.4	5.4	6-2	4-6
Over 50	•	•	•		6.6	2.8	4.1	1.2
Total					100-0	100.0	100-0	100-0

				Ratio of Deaths.				
Age at Deat Under 12 mo 1 to 5 years 5 to 15 ,, Over 15 ,,		:		Jews. 36·1 17·6 6·5 39·8	European. 28·5 14·3 6·7 50·5			
			-	100.0	100-0			

# JOINT-STOCK COMPANIES-JUTE.

# C.—Deaths of Jews according to Sex and Age.

			Je	Ws.	
Age. Under 1			Male, 38:4	Female.	Christians (Both Sexer). 29:3
1 to 5.	•		18.5	16.7	19-2
5 to 10.			4.7	4.3	4.9
10 to 20			4.3	4.5	4.6
20 to 40			8.5	12.5	11.3
40 to 60			12.0	13:3	12.9
Over 60		•	13.6	15.0	17.8
			100-0	100.0	100 0

# D.—Life-Value Compared with Christians.

#### Survival of 1000 Persons Born.

	•	Chris	stiens.	Ì	Jews	Christians.		
Age. 5	Jews (Prussia). 593	Prussia.	England. 751	Age. 40	(Prussia). 864	Prussia. 506	Eugland. 587	
10	535	620	727	50	305	438	506	
15	514	610	714	60	237	345	398	
20	482	602	699	70	153	206	253	
80	432	562	650	80	62	80	108	

# JOINT-STOCK COMPANIES, GREAT BRITAIN.

	Millions £.								
Period.	New Companies.	Capital.	Annual Average.	Capital per Company.					
1862- <b>65</b> .	. 2,986	639	160	£213,000					
1866-70 .	. 2,722	324	65	115,000					
1871-75 .	5,584	548	110	98,000					
1876-81 .	. 5,688	469	78	<b>82,000</b>					
20 years	. 17,030	1,980	99	£116,500					

See Investments.

JUSTICES OF PEACE.—In England and Wales there are 9660, of whom 7770 are for counties, the rest for towns.

#### JUTE

#### A.—Exports from India.

Year.			Tons.	Value.
1850 .			19,500	£89,000
1860 .			38,000	290,000
1870 .			120,000	1,520,000
1880 .	•		305,000	4,880,000

Jute is manufactured in India at 22 mills, with 6500 power-looms, which turn out 100 million sacks yearly, California taking 20 millions.

#### B.—Consumption in Great Britain.

<b></b>		Million Lb	Lbs. per	Value of	
Year.	Imported.	Exported.	Consumed.	I-bab	Manufacture (Thousands).
1850	42	••	42	14	£860
1860	90	4	86	8	1.980
1865	234	47	187	6	4,150
1871	388	64	824	10	9,470
1875	383	117	266	8	5,830
1881	558	146	407	11	8,610

#### C.—Exports of Jute Manufacture from Great Britain.

Year.	Million Yards.	Value (Thousands).	Per Yard, Pence.	Yarn, Million Lbs.	Total Export Value (Thousands).
1865	15	£812	4.8	5	£894
1870	52	790	3.6	13	987
1875	101	1,405	3.8	16	1,631
1880	183	2,255	8-0	17	2,488
1881	204	2,863	2.8	18	2,608

# K

KINGS.—In 1883 there are 22 kings, including emperors. The number who have ruled in various countries since the battle of Hastings, A.D. 1066, has been as follows:—

		No.	Average Reign, Yours.			No.	Average Reign, Years.
England		35	23	Spain		32	26
France .		34	24	Denmark		39	21
Germany		39	21	Sweden		53	15
Russia .		50	16	Turkey		85	17

The Turkish dynasty dates only from 1299. The average reign of the above 317 monarchs was just 20 years.

KOUMISS.—Spirit extracted by the Kalmucs from mares' milk: 2 gallons of milk give 18 ounces of koumiss wine, or 6 ounces of koumiss brandy.

KRUPP FACTORY.—Situate at Essen, near Cologne; is one of the greatest in the world.

Operatives . . 15,000 | Iron consumed . 26,000 tona. Steam, horse-power . 18,500 | Steel ,, . 130,000 ,,

About 500 tons of steel or iron are daily converted into artillery or railway bars. There are 82 steam hammers, the heaviest weighing 50 tons.



#### LABOURER-LAKES.

 $\mathbf{L}$ 

LABOURER.—Dr. Farr estimates the value of an agricultural labourer to the commonwealth as follows:—

Age.	Value.	Age.	Value.	Age.	Value,
5	£56	80	£241	55	£138
10	117	35	228	60	97
15	192	40	212	65	46
20	234	45	193	70	0
25	246	50	168		

At the age of 75 he is a loss of £25, and the loss rises to £41 at 80. This is only true of agricultural labourers, since intellectual workers are often of much value after 70 years of age, which balances the account. See Work.

**LACE.**—This industry employs in Great Britain 9000 men and 41,000 women, who produce lace annually to the value of 6 millions sterling. It is stated that more than 500,000 women on the Continent make lace, worth 30 millions yearly, or £60 each, but this seems a high average.

## LAKES.

		Square Miles.	Depth, Feet.	Area equal to
Superior		32,100	688	Ireland.
Aral .		23,300	731*	Holland.
Huron		20,400	600	Greece.
Baikal		14,800	580	Denmark.
Michigan		12,900	690	Belgium.
Erie .		9,600	84	Sardinia Island.
Ontario		7,650	510	•••
Ladoga		6,250	•••	Wurtemburg.
Onega		3,350	•••	Corsica.
Wenner		2,130	294*	Devonshire.
Wetter		733	410	Oxfordshire.
Constance		180	1,027*	Isle of Man.
Neagh		153	42	Malta.
Maggiore		130	<b>7</b> 0 <b>0</b>	
Zurich	•	40	600	St. Helena.

Maximum depth. The rest show the average depth,



# LAND.

# LAND.

# A.—CULTIVATION AND VALUE

	Acr	es (Millic	ns).			Rent.	
•	Culti- vated,	Uncul- tivated.	Total.	Millions &	Per Inhab- itant.	Per cul- tivated Acre.	Acre, in Shil- lings,
U. Kingdom .	47	23	70	1,737	£48	£33	20
France	67	49	116	2,624	70	36	24
Germany	68	57	125	2,060	45	25	18
Russia	195	894	1,089	1,386	18	8	2
Austria	57	85	142	1,290	36	15	8
Italy	27	41	68	810	28	22	11
Spain	22	90	112	660	40	18	5
Portugal	4	17	21	158	36	25	8
Belgium	5	1	6	245	46	48	80
Holland	5	2	7	212	53	42	30
Denmark	6	2	8	210	110	33	24
Sweden	12	86	98	312	66	12	5
Norway	3	70	73	110	60	11	4
Greece	2	9	11	105	57	18	12
Europe	520	1,426	1,946	11,919	40	20	8
United States	170	1,635	1,805	1,923	87	7	
Canada	16	1,902	1,918	180	42	8	
Australia	11		1,858	182	64	7	
Argent.Repub.	4	773	777	122	45	4	
Total	721	7,583	8,304	14,326	39	17	

The above values do not include public lands in the United States, Canada, Australia, or the Argentine Republic.

# B.—LAND-OWNERS OF UNITED KINGDOM.

C'ass,			No.	Acres.	Average Acres.
lst .			34	6,211,000	183,000
2nd .			841	3,156,000	3,760
8rd .			179,649	60,912,000	330
To	tal	_	180,524	70,279,000	390

					Average	per Owner.		at pe	_
			Owners.	Acres.	Acres.	Rental		CTS.	
England			154,774	33,110,000	212	£834	£1	11	4
Scotland			8,240	17,780,000	2,150	940	0	8	6
Ireland .			17,510	19,389,000	1,120	565	0	10	3
U. King	rdo	m	180,524	70,279,000	390	£887	£0	19	9

#### LAND.

#### C .- Owners of Land.

`	••	O			
		Number	Averag	e Estate,	Land-owners
		of Owners (Thousands).	Acres.	Value.	to Population. per Cent.
United Kingdom		180	890	£9,600	0.2
France	•	8,226	32	810	ŷ
	•			850	5
Germany	•	2,436	87		5
Russia	•	11,836	75	120	14
Austria	•	3,432	41	370	9
Italy		1,865	85	430	7
Spain		680	150	970	4
Portugal	٠.	252	80	630	6
Belgium		835	18	735	6
Holland		154	45	1,370	4
Denmark .	٠	71	115	2,960	Ā
Sweden	•	204	400	1,550	5
Norway	•	110	300	1,000	6
	•	163	66	640	9
Greece	•	103	00	020	8
_				2400	_
Europe .	•	24,444	80	£490	8
United States.		4,005	160	450	8
Canada		408	120	250	9
Australia .		168	380	1,090	6
Argentine Republ	ic	390	850	810	13
.,					_
Total .	•	29,415	96	£503	8

The above table does not include cottiers or persons owning less than 5 acres. See Serf-Lands, page 403.

# D.-LAND TENURE IN UNITED KINGDOM, CULTIVATED AREA.

Number of	Holdings	(Thousands).
-----------	----------	--------------

Acres. Under 50	England.	Wales.	Scotland.	Ireland.	U. Kingdom. 826
50 to 100 Over 100.	. 45 . 75	10	10 15	56 32	121 131
Total .	. 415	60	80	523	1,078

# Distribution of Area.

# Acres (Thousands Omitted).

Area. Under 50. 50 to 100. Over 100.	England. 3,500 8,200 18.200	Wales, 600 700 1,400	Scotland. 700 700 3,400	Ireland. 7,800 4,400 3,100	U. Kingdom. 12,600 9,000 26,100	Ratio. 26.5 18.8 54.7
0.01.100.	10,200	1,100	0,200	0,100	20,100	U1 /
Total .	24,900	2,700	4,800	15,300	47,700	100-0



268 *LAND*.

# E.—LAND RENTAL OF UNITED KINGDOM.

<b>—</b>			Thousands &.								
Year.	•		England.	ngland. Scotland.		U. Kingdom.	per Acre, 'Bhillings.				
1750			12,700	800	3,100	16,600	5				
1780			16,900	1,200	5,800	23,400	7				
1814			87,063	4,850	7,100	49,013	14				
1843			42,127	5,587	8,200	55,914	16				
1850			42,834	5,586	8,400	56,820	16				
1860			42,994	6,282	8,991	58,267	17				
1868			47,766	7,186	9,211	64,163	18				
1884			47,955	7,505	9,982	65,442	18				

The official rental valuation of land in England in 1810 for various counties showed thus:—

Leicester			hillings er Acre. 28	Stafford			r Acre.	Devonshire	Shillings per Acre	
Treicesrel	•	•	20	DUMIORU	•	•	21	Devonsnire	. 10	
Somerset			27	Kent .			20	Cornwall	. 15	
Worcester			24	Bedford	-		19	Monmouth		
Warwick			23	Lincoln			18 i	Durham .	. 9	
Laucashire			22	Surrey			17	Cardigan.	. 6	

# F.—Average Rent of Farms in England.

Years.		Shillings per Acre.	Years.			Shillings per Acre.
1701-50 .		 6	1821-40			19
1751-80 .	•	7	1841-60			21
1781-1800		10	1861-80			29
1801-20 .		27	1881-85	•		15

# G .- VALUE OF LAND IN FRANCE, PER ACRE.

		10	852.	1875.		
Vineyards		1st Class.	2nd Class.	1st Class. £56	2nd Class £36	
Meadow.	:	. 52	36	66	48	
Tillage .		. 36	20	48	28	

The official valuation of lands in France (which appears high) gave the following summary in 1881:—

Quality.		Acres (Thousands Omitted).	Value per Acre.	Value, Millions &
Orchards		. 1.783	£81	144
Vineyards		. 5,445	44	239
Meadows		. 6,170	55	340
Arable		41,819	36	1,488
Pasture, &c		. 28.010	18	414
Forest		. 21.288	12	256
Waste .	•	. 17,516	6	105
Total	J	116 531	£26	2 986



# LAND.

# H.—LAND VALUE IN 17th CENTURY (A.D. 1660). Million £. Per Acre.

		21111	~	1 th Acid,			
		Value.	Rental.	Value	<b>3.</b>	Rei	ntal.
England		185	81	£4 10	0	£0	6 0
France		122	15	1 4	0	0	8 0
Holland		46	4	9 0	0	0 1	5 0

The above does not include houses (see Colbert's Letter to Louis XIV.)  $\cdot$ 

# I.—LAND TENURE IN UNITED STATES.

Acres.	No. of	Farms (Th	ousands).	Ratio.			
Acres.	1860.	1870.	1880.	1860.	1870.	1880.	
Under 20	216	467	390	11.1	17.6	9.8	
20 to 50	617	848	781	31.6	32.0	19.5	
50 to 100	609	754	1,033	81-2	28.4	25.7	
100 to 500	487	565	1,696	24.8	21.3	42.4	
Over 500	25	20	105	1.3	0.7	2.6	
Total .	1,954	2,654	4,005	100.0	100.0	100.0	

# K .- LAND TENURE IN AUSTRALIA.

	Land-	Squatters.		ons of	Average Farm (Acres).	
	Owners.	Squares. E.	Free- hold.	Sheep- Runs.	Free- hold.	Squatter.
New S. Wales .	39,900	4,330	25.5	133-2	634	30,700
Victoria	49,600	612	14.8	14.3	321	23,300
New Zealand .	24,100	997	4.1	12.1	167	12,050
South Australia .	31,000	1,472	9.2	1150	296	78,000
Queensland	9,500	6,600	4.6	239.0	478	86,000
Tasmania	12,000	500	4.2	1.8	353	8,500
West Australia .	1,800	4,500	1.7	24.0	950	5,300
Total .	167,900	19,011	64.1	539.4	384	28,300

# L-LAND-OWNERS IN FRANCE.

Class.			Number.	Average Acres.	Area (Million Acres).
lst			154,000	320	48
2d			686,000	50	32
<b>3</b> d			2,436,000	10	23
Tota	l	•	3,226,000	32	103

#### LAND.

# LAND-OWNERS IN FRANCE—continued.

Number of Properties.

Tax.		1842.	1868.	1881.
Over £40		. 16,310	15,870	14,774
£4 to £40		. 480,000	466,000	600,000
Under £4	•	. 5,597,630	5,590,150	6,328, <b>209</b>
· To	tal	6,093,940	6,072,020	6,942,974

# M.—LAND-OWNERS IN GERMANY.

		Number.	Average Acres.	Area (Million Acres.)
Prussia .		1,033,000	48	49
Bavaria .		456,000	25	11
Saxony .		54,000	50	21
Wurtemburg		152,000	17	2] 2
Baden		111,000	15	2
Darmstadt .		140,000	10	11
Coburg .		15,000	88	Į.
Small States	•	475,000	40	19
Total		2,436,000	87	88

#### N.-Land-owners in Russia.

Class		Number.	Mi	Millions of Acres.			
Civini		Number.	Arable. Forest, &c.		Total.	Estate (Acres).	
Nobles .		103,000	60	132	192	2,000	
Cossacks		142,000	10	8	18	130	
Civilians		240,000	6	32	38	160	
Peasants	•	10,851,000	164	438	602	55	
Tota	ı .	11,836,000	240	610	850	75	

# O .- LAND-OWNERS IN ITALY.

				Estates.	Average Acres.	Area (Million Acres).
Lombardy ar	ıd P	iedm	ont	1,180,000	16	19
Tuscany and	Ron	nagn	в.	145,000	110	16
Naples .		•		120,000	180	21
Sicily, &c.				410,000	40	16
						_
Total		•		1,865,000	<b>3</b> 9	72

Almost one-half of Italy is farmed by the owners of the soil, as shown by the tenure, viz :-

1,140,000 proprietors farm 33,000,000 acrea, 1,248,000 metayers ,, 18,000,000 ,, 310,000 tenants ,, 20,000,000 ,,

The "metayer" system is adverse to improvement.

# LAND.

# P.—LAND-OWNERS IN AUSTRIA.

				·		
				Estates,	Average Acres,	Area (Million Acres)
Austria				189,000	42	8
Bohemia				199,000	65	18
Galitzia				496,000	40	20
Styria				134,000	40	51
Moravia	-	-	:	98,000	56	5
Tyrol		•	•	118,000	68	7
Carinthia	&c.		•	277,000	54	15
					_	
Austris	١.			1,506,000	50	74
Hungary	•	•	•	1,925,000	35	68
_	_				-	
To	tal	•	•	8,481,000	41	142
Nobles				11,800	5,200	62
Peasants			•	8,420,000	28	80
То	tal			8.481.800	41	142

# Q.-LAND TENURE IN BELGIUM.

Class.	Average Acres.	Holdings.	Area (Acres)
Small tenants .	. 10	63,000	640,000
Small freeholds	. 8	270,000	2,200,000
Middle size ditto	. 40	61,700	2,500,000
Large estates .	. 160	4,000	650,000
Total .	. 15	398,700	5,990,000

# R.—LAND TENURE IN DENMARK.

Holders.			Number,	Average Acres.	Area (Acres).
Nobles .			550	2,500	1,880,000
Farmers			1,180	300	860,000
Bondsmen			69,100	60	4,200,000
Huusmen	•	•	187,000	4	560,000
Tota	1.	•	207,830	31	6,500,000

# S.—Land Tenure in Sweden.

		Number.	Average Acres,	Area (Million Acres)
Nobles .		2,650	14,000	38
Freeholders		191,000	<b>200</b>	88
Tenants .		40,000	400	16
Total		233,650	396	92

# LAND-ACTS (IRELAND).

1st in 1850. Encumbered Estates. In 30 years ending December 1880 the Land Court sold 3,600,000 acres for £52,700,000, nearly £15 per acre.

2nd in 1870. During 10 years down to 1880 the tenants bought 49,300 acres for £838,000, say £17 per acre.

3rd in 1881. The working during the first 12 months to August 1882, was as follows:—

Cases adjudicated	•		Old rent		£580,000
Acres affected . Griffith's valuation	•	£421,000	New adjudication	•	£464,000

Tenants' interests have acquired an average value of  $\pounds 4$  per acre.

# LAND-GRANTS (UNITED STATES).

From the year 1800 till 1881 the United States Government ceded 192 million acres of public lands to railways, 77 million to schools, 62 million to military, and 30 million for other purposes, besides 248 million acres in sales to settlers (see page 273), this last item including 67 million granted in homestead lots at twopence per acre.

#### LAND-OWNERS IN UNITED KINGDOM.

## A.—Over 150,000 Acres.

Argyll, Duke .	175,000	Lovat, Lord 162,000
Athol, Duke	195,000	Mackenzie 165,000
Baillie, Evan .	166,000	Matheson 627,000
Berridge, Richard	170,000	Middleton, Lord . 1,006,000
Breadalbane, Marquis	438,000	Northumberland, Duke 186,000
Buccleuch, Duke .	460,000	Portland, Duke 162,000
Conyngham, Marquis	173,000	Richmond, Duke 286,000
Devonshire, Duke	193,000	Ross, C. W 167,000
Fife, Earl	258,000	Seafield, Earl 306,000
Hamilton, Duke .	157,000	Sutherland, Duke 1,358,000

## B.—Rentais Over £100,000 per Annum.

Anglesea, Marquis	£107,000	Fitzwilliam, Earl		£136,000
Bedford, Duke .	142,000	Haldon, Lord .		109,000
Buccleuch, Duke .	231,000	Hamilton, Duke .		141,000
Bute, Marquis .	232,000	Norfolk, Duke .		270,000
Calthorpe, Lord .	123,000	Northumberland, Duk	e	176,000
Derby, Earl	170,000	Portland, Duke .		140,000
Devonshire, Duke	170,000	Ramsden, L .		175,000
Downshire, Marquis	100,000	Sutherland, Duke		142,000
Dudley, Earl	123,000	Tredegar, Lord .		125,000



# LAND SALES.

#### 273

# LAND SALES.

# A.—Australian Crown Lands (1876-80). Acres Sold. Annual Average. Acres

					/-
			Acres Sold.	Annual Average.	Acres Unsold.
New South Wal	<b>es</b>		14,802,000	2,800,000	164,600,000
Victoria .			1,803,000	360,000	44,090,000
New Zealand			2,350,000	470,000	52,000,000
South Australia			2,580,000	516,000	570,000,000
Queensland			2,820,000	564,000	422,700,000
Tasmania .			210,000	42,000	12,640,000
West Australia	•	•	151,000	80,000	622,800,000
Total .			24,216,000	4,782,000	1,888,830,000
]	В.—	От	HER COLON	nes (1876–80).	
			Acres Sold.	Annual Average.	Acres Unsold,
Cape of Good H	оре			1,560,000	56,900,000
Ceylon	٠.		144,000	29,000	12,160,000
Trinidad .			88,000	7,000	790,000
Natal	•		180,000	25,000	8,900,000

# C.—United States: Acres Sold.

Total . . 7,837,000

# Sale of Public Lands during 10 Years ending 1881.

1,621,000

73,750,000

			1872-76.	1877-81.	10 Years.
Dakota			1,478,000	8,190,000	9,668,000
Kansas			4,545,000	8,022,000	12,567,000
Nebraska		•	3,253,000	4,220,000	7,473,000
Minnesota			2,442,000	4,208,000	6,650,000
California			3,334,000	2,502,000	5,836,000
Wisconsin			1,811,000	880,000	2,691,000
Oregon			1,016,000	1,001,000	2,017,000
Washingto	n		539,000	1,424,000	1,963,000
Michigan			2,054,000	1,107,000	3,161,000
Arkansas			1,142,000	1,538,000	2,680,000
Alabama			795,000	1,280,000	2,075,000
Colorada		٠.	860,000	<b>8</b> 0 <b>7,00</b> 0	1,667,000
Florida			570,000	713,000	1,283,000
Other Stat	es	•	<b>2,663</b> ,000	3,452,000	6,115,000
Total			26,502,000	39,344,000	65,846,000

# · Summary of United States Lands sold since 1800.

1800–20		•	Acres Sold. 13,060,000	Amount Received, £4,080,000	Annual Average of Acres Sold. 650,000
1821-40	· ·		72,430,000	16,882,000	3,620,000
1841-60	·		68,520,000	12,726,000	3,426,000
1861-80	•		94,110,000	9,523,000	4,710,000
80 year	18	•	248,120,000	43,211,000	3,100,000



# LANGUAGES.

# LANGUAGES.

A .- SPOKEN IN 1801 (THOUSANDS OMITTED).

	English.	French.	German.	Italian.	Spanish.	Portu- guese.	Russisa
U. Kingdom .	14,480	30	10	5	1		
France	15	26,700	1,160	10	2		
Germany	30	600	20,380	2		***	20
Russia	2	40	430	2		177	
Austria	î	20		4.00		***	29,600
Table	i		6,300	260	1	***	1,100
		480	2	14,440	1	449	***
Spain	1	40	1	1	10,230	20	***
Portugal	1	5	1	1	30	3,030	***
Holland	2		200	***	-01	***	
Belgium	3	1,800	100	***	***	***	
Scandinavia	1	10	20				10
Switzerland	1	400	1,400	120	***		
Europe	14,538	30,155	30,004	14.841	10,265	3,050	30,730
U. States	5,250	230	280	5	5		
British colonies	580	310	20	2	2		***
French	10		2	2	2	***	***
Spanish America	2		1	3	15,430	20	***
Brazil	1	3		1			***
The East	140	290	10	220	120 370	4,160	
The East	-	1000			- 317	250	40
The World .	20,521	31,448	30,318	15,074	26,194	7,480	30,770
The World . B.—Spo		1				1	30,770
		1883			в Омг	TTED).	
B.—Spo	KEN II	1883	З (Тно	USAND	в Омг	TTED).	
B.—Spo U. Kingdom . France	KEN II	1883 100 36,400	100 800	40 250	10 20	TTED).	
B.—Spo U. Kingdom . France Germany	35,200 180 120	1883 100 36,400 600	100 800 43,300	40 250 10	10 20	TTED).	
B.—Spo U. Kingdom France Germany Russia	35,200 180 120 10	100 36,400 600 200	100 800 43,300 3,700	40 250 10 10	10 20 	TTED).	 20 63,200
B.—Spo U. Kingdom France Germany Russia Austria Austria	35,200 180 120 10 5	1883 100 36,400 600 200 100	100 800 43,300 3,700 11,800	40 250 10 10 450	10 20  2	rted).	 20 63,200 3,230
B.—Spo U. Kingdom France Germany Russia Austria Italy Italy	35,200 180 120 10 5	1883 100 36,400 600 200 100 840	100 800 43,300 3,700 11,800	40 250 10 10 450 27,330	10 20  2 2	TTED).	 20 63,200
B.—Spo U. Kingdom France Germany Russia Austria Ltaly Spain	35,200 180 120 10 5	1883 100 36,400 600 200 100 840 60	100 800 43,300 3,700 11,800 3	40 250 10 10 450 27,330	10 20  2 2 1 16,390	TTED).	 20 63,200 3,230
B.—Spo U. Kingdom France Germany Russia Austria Ltaly Spain Portugal	35,200 180 120 10 5 10 4 2	1883 100 36,400 600 200 100 840 60 10	100 800 43,300 3,700 11,800 3	40 250 10 10 450 27,330 1	10 20  2 2	TTED).	63,200 3,230
B.—Spo U. Kingdom France Germany Austria Austria Italy Spain Portugal Holland	35,200 180 120 10 5 10 4 2 5	1883 100 36,400 600 200 100 840 60 10 20	100 800 43,300 3,700 11,800 3 1 1 400	40 250 10 10 450 27,330	10 20  2 2 1 16,390	TTED).	63,200 3,230
B.—Spo U. Kingdom France Germany Russia Austria Italy Spain Portugal Holland Belgium	35,200 180 120 10 5 10 4 2 5	1883 100 36,400 600 200 100 840 60 10 20 3,820	100 800 43,300 3,700 11,800 3 1 1 400 240	40 250 10 10 450 27,330 1	10 20  2 2 1 16,390 30	TTED).	63,200 3,230
B.—Spo U. Kingdom France Germany Russia Austria Italy Spain Portugal Holland Belgium Scandinavia	35,200 180 120 10 5 10 4 4 2 5 15	1883 100 36,400 600 200 100 840 60 10 20 3,820 40	100 43,300 3,700 11,800 3 1 1 400 240 60	40 250 10 450 450 27,330 1	10 20  2 2 1 16,390 30	20 4,220	63,200 3,230
B.—Spo U. Kingdom France Germany Russia Austria Italy Spain Portugal Holland Belgium	35,200 180 120 10 5 10 4 2 5	1883 100 36,400 600 200 100 840 60 10 20 3,820	100 800 43,300 3,700 11,800 3 1 1 400 240	40 250 10 10 450 27,330 1	10 20  2 2 1 16,390 30	20 4,220	63,200 3,230
B.—Spo U. Kingdom France Germany Russia Austria Italy Spain Portugal Holland Belgium Scandinavia Switzerland Europe	35,200 180 120 10 5 10 4 2 5 15 3 3	1883 100 36,400 600 200 100 840 60 10 20 3,820 40	100 800 43,300 3,700 11,800 3 1 1 400 2,031	40 250 10 450 450 27,330 1	10 20  2 2 1 16,390 30 	20 4,220	63,200 3,230
B.—Spo  U. Kingdom France Germany Russia Austria Italy Spain Portugal Holland Belgium Scandinavia Switzerland Europe U. States	35,200 180 120 10 5 10 4 2 5 15 3 3	1883 100 36,400 600 200 100 840 60 10 20 3,820 40 608 42,798	100 800 43,300 3,700 11,800 11,800 240 60 2,031	250 10 10 450 27,330 1 	10 20  2 2 2 1 16,390 30	20 4,220	63,200 3,230  5
B.—Spo U. Kingdom France Germany Russia Austria Italy Spain Portugal Holland Belgium Scandinavia Switzerland Europe	35,200 180 120 10 5 10 4 4 2 5 15 3 5	1883 100 36,400 600 200 100 840 60 20 3,820 40 608 42,798 840	100 800 43,300 3,700 11,800 11,800 240 60 2,031 62,486 6,130	250 10 10 450 27,330 1  162 28,253	10 20  2 2 2 16,390 30 	20 4,220  4,240	66,455 306
B.—Spo  U. Kingdom France Germany Russia Austria Italy Spain Portugal Holland Belgium Scandinavia Switzerland Europe U. States	35,200 180 120 10 5 10 4 2 5 15 3 5 35,559 50,300	1883 100 36,400 600 200 100 840 60 20 3,820 40 608 42,798 840	100 800 43,300 3,700 11,800 11,800 240 60 2,031 62,486 6,130	250 10 10 450 27,330 1  162 28,253 160	10 20  2 2 2 1 16,390 30   16,455 370	20 4,220	63,200 3,230  5
B.—Spo  U. Kingdom France Germany Russia Austria Italy Spain Portugal Holland Belgium Scandinavia Switzerland  Europe U. States British colonies	35,200 180 120 10 5 5 10 4 2 2 5 15 3 5 35,559 50,300 11,680	1883 100 36,400 600 200 840 60 100 3,820 40 608 42,798 840 1,220 2,360	100 800 43,300 3,700 11,800 3 1 1 400 240 60 2,031 62,486 6,130 80 10	250 10 10 450 27,330 27,330 1  162 28,253 160 40 50	10 20 2 2 1 16,390 30	20 4,220 4,240	63,200 3,230 3,230 5 66,455
B.—Spo  U. Kingdom France Germany Russia Austria Italy Spain Portugal Holland Belgium Scandinavia Switzerland  Europe U. States British colonies French Spanish America	35,200 180 120 10 10 4 4 25 5 15 3 5 35,559 50,300 11,680 30	1883 100 36,400 600 200 840 60 100 20 3,820 40 608 42,798 840 1,220 2,360 150	100 800 43,300 3,700 11,800 11,800 240 60 2,031 62,486 6,130 80 10 400	250 10 450 27,330 1  162 28,253 160 40 880	10 20 2 2 1 16,390 30	20 4,220  4,240 10	63,200 3,230 3,230 5 66,455
B.—Spo  U. Kingdom France Germany Russia Austria Italy Spain Fortugal Holland Belgium Scandinavia Switzerland Europe U. States British colonies French	35,200 180 120 10 5 10 4 2 5 15 35,559 50,300 11,680 90	1883 100 36,400 600 200 100 840 60 10 20 3,820 40 608 42,798 840 1,220 2,360 150 20	100 800 43,300 3,700 11,800 3 1 1 400 240 60 2,031 62,486 6,130 80 10	250 10 10 450 27,330 27,330 1  162 28,253 160 40 50	10 20 2 2 1 16,390 30	20 4,220 4,240	63,200 3,230 3,230 5 66,455



# LANGUAGES.

# C.—Comparison between 1801 and 1883.

			Spoken by	y Millions.	Aliquot Parts.		
Languages.			1801.	1883.	1801.	1888.	
English			21	100	12.9	27·1	
French			82	48	19.6	13.0	
German			80	69	18.4	18.6	
Italian			15	80	9-2	8.1	
Spanish			26	41	16.0	11.4	
Portugues	8		8	13	5.0	8.5	
Russian	•	•	81	67	18-9	18.3	
Total			163	368	100.0	100.0	

# D.—LETTERS EMPLOYED IN LANGUAGES (PROSE).

			English.	French.	Italian.	Spanish.	Latin.	German.
A			64	80	99	121	79	64
B	·	·	ii	8	2	11	14	20
õ	•	•	20	80	40	48	42	22
Ď	•	•	34	35	42	55	29	71
Ē	•	•	137	184	131	145	92	178
F	•	•	23	8	12	6	13	14
Ğ	•	•	19	12	20	11	22	81
H	•	•	65	2	11	20	2	40
ī	•	•	71	76	103	37	120	8 <b>6</b>
	•	•	'i	2	4	8	120	6
J	•	•		2	•	•	3	9
K	•	•	6		***			
L	. •	•	40	47	71	61	29	29
M		٠	24	87	12	26	62	22
N	•	•	66	78	71	55	44	110
0			76	41	96	107	50	27
P			23	83	28	24	82	11
Q			1	8	9	15	11	•••
OP QRS			70	78	52	69	77	84
S			75	99	74	69	79	55
T			88	70	55	48	66	48
T U V			34	58	47	46	106	49
V			18	17	15	10	18	9
W	7		16	•••		•••	•••	20
X			ì	5	•••	•••	9	•••
v	•	Ī	17	2		5		•••
Y	•	•			6	3		4
-	•	٠						
	Total		1,000	1,000	1,000	1,000	1,000	1,000

Where blanks occur it shows either that the letter is not used, or that the use does not reach 1 in 1000, such as "z" in English, or "x" in Spanish. The Spanish N, of which 55 are used, includes three "n," equivalent to "ny" in English.



# 276 LATITUDE AND LONGITUDE.

# LATITUDE AND LONGITUDE.

**A.** ,

			٠, ما		
	Latitude.	Longitude.		Latitude.	Longitude.
Algiers	36.46 N.	8.6 E.	Liverpool .	53.24 N.	2.58 W.
Amsterdam	51.21 ,,	4.58 ,,	London .	51.31 "	0.5 ,,
Antwerp .	51.18 "	4.25 ,,	Madeira .	88.0 ,,	18.0 "
Archangel.	65.40 ,,	43.0 "	Madras .	13.12 ,,	80-21 E.
Azores	28.0 ,,	26 0 W.	Madrid .	40.28 ,,	8·40 W.
Bagdad	33.20 ,,	44-24 E.	Malta	85.54 ,,	14·27 R.
Baltimore .	39.15 ,,	76·30 W.	Manchester	58-29 "	2·14 W.
Belfast	54.86 ,,	5.55 ,,	Manilla .	14.85 ,,	120-48 E.
Berlin .	52.83 ,,	13.25 "	Marseilles.	48.18 ,,	5-28 ,
Bombay .	19·2 N.	72·50 E.	Mauritius .	20·15 S.	57.0 ,,
Bordeaux .	45.0 "	0.20 W.	Melbourne	87.52 ,,	1450 ,,
Boston	42.20 "	71.9 ,,	Mexico	19 30 N.	99-2 W.
Brussels .	50.52 "	8-21 R.	Milan	45.40	9·10 R.
Bucharest .	44.28 ,,	26.9 "	Montreal .	45.80 ,,	73·30 W.
Buda-Pesth	47.31 ,,	19·1 "	Moscow .	55.40 ,,	87 28 E.
B. Ayres .	34·36 S.	58-22 W.	Munich .	487 "	11.35
Cadiz	36·32 N.	6.18 "	Naples	40.52 ,,	14.15 "
Cairo	30.5 ,,	81·45 E.	N. Orleans	30.7 ,,	90.0 W.
Calcutta .	22.40 ,,	88·2 <b>5</b> "	New York	40.40 ,,	74.0 ,,
Canton	23.10 ,,	113.9 ,	Palermo .	38.6 "	13.23 E.
Cape Town	34·30 S.	18.0 ,,	Paris	48.52 ,,	2.21 "
Caracas .	10·30 N.	67·10 W.	Pekin	40.0 ,,	116.23
Chicago .	420 ,,	83.31 ,,	Philadelphia	39.52 ,,	77·30 W.
Cincinnati	89.0 ,,	84.15 ,,	Prague	50.5 ,,	14 25 E.
	49.9	28·58 E.	Quebec	46.50 ,,	72·0 W.
Constanti- ) nople . }	41.1 "	20 30 E.	Quito	07 S.	78· <b>49</b> "
Copenhagen	55.42 ,,	12:34 "	Rio Janeiro		43.20 "
Demerara.	5.30 ,,	58·20 W.	Rome	41·53 N.	12·28 E.
Dresden .	51.6 ,,	13·36 E.	Rotterdam	51.55 "	4-29 ,,
Dublin	53.21 ,,	6·17 W.	St. Louis .	<b>3</b> 8·40 ,,	90·12 W.
Edinburgh	55.57 ,,	3.12 "	St. Peters- ) burg	59.40	31·0 E.
Falkland Is.	51·30 S.	59·0 <b>"</b>	burg \		
Faroe Is	62·0 N.	70 "	S.Francisco	37·59 <b>"</b>	121·59 W.
Florence .	43.45 "	11·16 E.	Sierra Leone	8.45 "	13·10 "
Frankfort.	50.8 "	8:33 "	Singapore .	1-27 "	103·48 E.
Geneva	46.2 ,,	6.9 "	Stockholm	59 <del>-2</del> 0 ,,	180 "
Genoa	44.30 ,,	90 "	Sydney	34·0 S.	151·12 E.
Gibraltar .	<b>36</b> ·8 "	5 20 W.	Teneriffe .	28·30 N.	17·0 W.
Glasgow .	55·52 "	4.8 "	Toronto .	43.47 "	79-25 ,,
Guatemala	14.0 ,,	<b>8</b> 870 ,,	Trinidad .	10.50 "	61.15 "
Halifax .	44.30 "	63·55 <u>"</u>	Tunis	36 44 "	10.5 E.
Hamburg .	53.34 ,,	10·3 E.	Turin	45.5 ,	7.44 ,,
Havanna .	23.7 "	82-28 W.	Valparaiso	83·02 S.	71.45 W.
Hobart	42.54 S.	147·27 E.	Venice	45-27 N.	12 <del>-25</del> F.
Jersey	49·15 N.	2·5 W.	Vera Cruz	19.30 "	96·40 W.
Jerusalem .	31.48 "	85·10 E.	Vienna	489 "	16-24 E.
Lima	12·0 <b>S</b> .	77·0 W.	Warsaw .	52.15 "	21.0 "
Lisbon	38·44 N.	9.6	Washington	38-55 _	77 5 W.



#### LEAD-LEATHER.

#### B.—Degrees of Longitude, English Miles.

		,	
Latitude.	Degree of Long. Miles,	Latitude.	Degree of Long. Miles.
10	681	40	54
15	67 <del>-</del>	45	50
20	65 <del>1</del>	50	45
25	634	60	35
80	594	70	24
85	57	80	12

# LEAD.

#### PRODUCTION OF METALLIC LEAD (TONS).

	Z 250		OZZON OZ	Trustanto.		~ <i>j</i> •
			1880.	. 1850.	1880.	Value in 1880.
Great Brit	ain		48,000	55,000	51,000	£850,000
France			1,100	7.000	32,000	650,000
Germany			9,500	16,000	58,600	1.120.000
Italy .	-		8,000	12,000	88,000	580,000
Spain .			23,000	27,000	92,300	1,660,000
Austria	-		7,000	11,000	8,900	160,000
Greece, Bel	gium	, &c		6,500	14,400	260,000
Europe			100,600	134,500	290,200	£5,280,000
United Sta	stes	•	8,700	86,000	89,000	1,580,000
Tot	al		104,300	170,500	379,200	£6,860,000

Good lead ore gives 70 per cent. of lead, and in smelting it takes 2 tons of coal to produce 3 tons of lead. The Cordoba mines in Spain are said to be the richest in the world. The Missouri lead-field, near Chicago, is  $1\frac{1}{2}$  miles in length, the ore giving 70 per cent. lead. The importation of lead into the United States fell from 42,000 tons in 1870 to 4,000 in 1880

**LEATHER.**—The production and manufacture have been as follows:—

			Million	a Lbs. L	eather.	Manufactured Value (Thousands).			
Y	car.		British Hidos.	Foreign Hides.	Total.	Home.	Export.	Total.	
1805			27		27	£6,000	£15	£6,015	
1820			36	12	48	9,000	40	9,040	
1830			40	30	70	12,600	80	12,680	
1840			45	37	82	14,200	170	14,370	
1850			50	70	120	19,700	610	20,310	
1860			55	87	142	22,300	2,130	24,430	
1870			60	132	192	28,600	2,640	31,240	
1881			65	144	205	30,100	3,930	34,030	

A cow-hide gives 35 lbs., a horse's 18 lbs. leather. See Hides.



#### LEGACY RETURNS.

#### LEGACY RETURNS.

# A.—United Kingdom.

Yours.	Annual Average, Millions &	Estimate of Public Wealth, Millions &.	Ratio of Wealth per Inhabitant,
1811-20	. 25.5	2,460	£124
1841-50	. 43-9	4,420	165
1861-70	. 73.6	5,970	201
1880	. 118.7	8,440	242

The above does not include succession property, which amounts to about one-third of the former.

#### B.—LEGACY AND SUCCESSION PROPERTY, AND DEATHS.

					ons &.		ths, sands.	Property to each Death.	
				1840.	1877.	1840.	1877.	1840.	1877.
England	•		•	47.1	107.9	360	501	£131	£216
Scotland				3.1	16.1	54	74	56	217
Ireland	•	•		4.2	7.3	172	94	26	78
United	King	dom		54.7	131.3	586	669	£93	£197

The returns for Scotland in 1840 did not include mortgages, and if these were added, the averages would be 25 per cent. higher, say £70 per inhabitant instead of £56.

# C.—Number of Estates Proved in 1877.

Amount,	England.	Scotland.	reland.	U. Kingdom,	
Over £20,000	945	125	59	1.129	
£5,000 to 20,000	2,784	356	199	3,339	
1,000 ,, 5,000	7,625	1,262	800	9,687	
800 ,, 1,000	10,387	1,545	1,070	13,002	
100 " 300	11,526	1,022	1,201	13,749	
Total	33,267	4,310	3,329	40,906	

The number of persons who left property at their death, compared with the general deaths of the population in 1877, shows a ratio of 66 per 1000 in England, 58 in Scotland, and only 35 per 1000 in Ireland, or a general average of 61 per 1000 for the United Kingdom.



# LEGACY RETURNS.

#### D.—Amounts Proved in 1877.

		Aggregate,	Millions &.	•				
Estates,	England.	Scotland.	Ireland.	U. Kingdom.				
Over £20,000	55-2	8.6	2:9	66-7				
£5,000 to 20,000	27.4	8.5	1.9	82.8				
1,000 ,, 5,000	17-2	2.8	1.7	21.7				
800 ,, 1,000	6.0	0-9	0.6	7.5				
Under 300	2.1	0.2	0.5	2.5				
Total .	107-9	16.0	7:3	131-2				

It appears from the above that one-half of the wealth of the United Kingdom is held by persons who leave at least £20,000 at death, and only one-tenth by those whose estates are proved under £1000. The persons in easy circumstances, between £1000 and £20,000, represent 40 per cent. of the wealth of the nation.

E.—RATIO OF INHERITANCES AND SUCCESSIONS.

	Per 1000 Deaths of Population (1877).						
Amount Proved.	England.	Scotland.	Ireland.	U. Kingdom.			
Over £30,000	1.16	1.13	0.37	1.04			
£20,000 to 80,000	0.73	0.55	0.25	0.64			
10,000 ,, 20,000	2-20	1.93	0.81	1-97			
5,000 ,, 10,000	3.36	2.88	1-29	8.01			
1,000 ,, 5,000	15.25	17.05	8.48	14.45			
600 ,, 1,000	7.98	8.41	4.47	7.51			
800 , 600	12.79	12.47	6.87	11.89			
100 , 300	23.05	13.81	12 73	20.52			
Total .	66.52	58.23	35-27	61.03			

# F.—Estates in England over £250,000.

The aggregate of wills proved over ½ million sterling in the past 10 years shows thus:—

1873 1874 1875 1876	:	•	£12,700 5,600 7,800 9,900	1878 1879 1880 1881	•	:	Omitted. £9,200 12,200 17,800 8,000
1877 5 ve	Ars	•	7,400 £43,400	1882 5 ve	era	•	7,700 £54,900



#### LEGACY RETURNS.

#### G.-LEGACT RETURNS IN FRANCE.

Year.	Amount Proved, Millions &.	Per Death of Population.	Per Living Inhabitant
1830	. 58	£78	£1 16 0
1840	. 64	75	1 18 0
1850	. 81	δ8	2 6 0
1860	. 109	13 <del>0</del>	8 1 0
1870	. 135	128	8 15 0
1880	. 210	247	5 17 0

# H.—France and Great Britain Compared.

	1	imount o Millio	f Probate, ns &	Ratio per Death of Population.		
France		1860. 109	1880. 210	1860. £130	1880. £247	
Great Britain . United Kingdom	:	89 95	145 154	184 160	242 220	

Real estate is in France only 49 per cent., whereas in Great Britain it forms 62 per cent. of the public riches.

From the above table it would appear that the wealth of France is greater than that of Great Britain, but this is not true. In the first place, the French include properties under £100, which we do not; and in the second place, their deathrate being 15 per cent. higher than ours, the transfer of property is 15 per cent. more rapid than in Great Britain.

#### L-Testamentary Estates in Holland.

Year.		Value, Millions &	Estimated Public Wealth, Millions &.	Per Inhabi-
1850		12	380	£113
1860		15	480	120
1870		21	670	175
1880		80	960	240

From this it would appear that wealth has grown more rapidly in Holland than in the United Kingdom. See Table A.

The components of Dutch testamentary estates in 1880 were as follows:—

Houses and lands .	•		£11,600,000
Furniture and bullion			2,300,000
Shares, bonds, scrip, &c.		•	15,800,000
Total			£29 700 000



#### LEGUMINOUS PLANTS-LETTERS.

281

#### LEGUMINOUS PLANTS.

Europe	184	South America	605	Levant	250
Mediterranean .	468	Australia	229	North Africa	108
United States .	183	China	77	Central Africa	130
Mexico	152	East Indies .	452	South Africa	395
West Indies	221	Siberia	129	Islands	42

LEMONS.—Italy has 4,800,000 trees, which produce 1260 million lemons per annum.

LEPROSY.—There are in Norway 2180 lepers. The numbers in Spain and Italy are considerable. In the Sandwich Islands the disease is so prevalent that the island of Molokai is set apart for lepers, who are under the direction of a French priest. In the Seychelles Islands leprosy is also common.

In Cyprus a leper-farm was established in 1830, one mile from Nicosia: area 100 acres, tillage 11 acres; house of 26 rooms occupied by—

Greeks. Turks.	:	•	•	44 2	Males . Females	:	•	<b>8</b> 3 13
Total				46	Total		•	46

Death-rate, 16 per cent. per annum; new patients, 14 in the year (1879). All very clean. Five married couples; two have children quite healthy, but rest are childless. All the lepers have lost fingers. One woman of 80 has been there 50 years.

LETTERS.—The annual circulation in the principal countries is shown as follows:—

Country.	Millions.	Number per Inhab.	Country.	Millions.	Number per Inhab.
England	1,220	44	Russia .	. 110	11
Scotland	127	83	Austria .	. 483	13
Ireland	91	18	Italy	. 196	7
United Kingdom	1,438	40	Spain	. 71	4
United States .	1,155	22	Holland .	. 71	18
France	595	15	Belgium	. 91	17
Germany	721	16	Switzerland .	. 65	24
Swed. and Nor	46	7	Canada .	. 57	13
Denmark	25	13	Australia .	. 36	12
Portugal	16	4	Japan	. 48	2



#### LIBRARIES.

#### LIBRARIES.

# A.—Public Libraries of all Countries.

	Libraries.		Vols. (Th	ousands).	Vols. per 100 Inhabitanta.		
	1848.	1880.	1848.	1880.	1848.	1880.	
United Kingdom	28	202	1,542	8,770	6	11	
France	107	505	3.975	7,298	11	19	
Germany	80	594	8,058	4.070	9	9	
Russia	12	145	451	950	li	l i	
Austria	41	577	2,193	5,476	7	14	
Italy	45	498	2,274	4.849	111	15	
Spain and Port	24	90	968	1,200	6	6	
Switzerland	13	1,654	465	1.819	22	64	
Belgium	10	105	400	610	9	111	
Holland	10	220	330	800	11	20	
Scandinavia	13	94	968	1,250	16	17	
Europe	383	4,679	16,614	31,592	7	10	
United States .	20	59	600	2,263	2	4	
Total	403	4,738	17,214	33,855	6	9	

The above does not include any libraries with less than 10,000 volumes (except possibly those of Switzerland), nor school libraries, of which there are 23,000 in the United States, with 45 million books.

# B-PRINCIPAL LIBRARIES OF THE WORLD.

		Tho	nsands.		Thous	ands.
		Vola.	MSS.		Vols.	M88.
British Museum		1,120	41	Copenhagen	410	5
Imperial, Paris		2,078	86	Gottingen	400	5
St. Petersburg		1,045	84	Oxford	300	22
Berlin		740	15	Brussels	210	20
Munich		819	24	St. Genevieve, Paris	250	30
Vienna		420	21	Washington	230	•••
Dresden		500	4	Boston	202	•••
Vatican	•	840	32	Astor, New York .	160	•••

The library of the British Museum has 32 miles of shelves filled with books, and is visited by 91,000 readers yearly. The Bibliotheque Imperiale of Paris has 18 miles of books and 37,000 readers yearly.



# LIFE.

# LIPE.

# A.—Expectation at Various Ages, in Years.

Age. 10	England,	U. States.	Belgium.	Holland.	Saxony.	Sweden.
	49-2	<b>48</b> ·7	44.3	46.5	47-0	48-0
20	41.0	42.2	87 1	88-9	39.3	40.1
<b>8</b> 0	<b>33</b> -6	85·3	81-2	<b>82·1</b>	<b>82·1</b>	88.2
40	26.7	<b>28·2</b>	25.5	26.2	25.0	25-9
50	20.2	20.9	19.6	20.0	180	19·1
60	18.9	14.1	18· <b>2</b>	18:3	11.7	12.9
70	8-9	8.5	8.2	8-0	6.9	8-0
80	5.2	4.4	5.3	4.6	3∙9	4.1

# B.—Expectation according to Sex: Years to Live.

• -	Eng	land.	Hol	land.	Sw	eden.	Belgium.	
Age.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female
Birth .	41.9	45.2	34.1	86.4	41.3	45.6		·
5 years	51.2	53.6	48.7	49.2	49.4	53.0	•••	<b> </b>
10 ,,	48-2	50.8	45.9	46.5	46.5	50-0	43.8	44.8
20 ,	39-9	42.1	38.3	39 2	38.6	42.1	36.4	37.7
80 ,	83-2	34.1	31.8	32.4	31.2	34.5	30.2	31.9
40 ,,	26.5	27.5	25.0	26.4	24.3	27.2	24.8	26.1
50 ,,	19-9	20.8	18.5	197	18.0	20.1	18.9	20.3
60 ,,	13.6	14.5	12.8	13.3	12.3	13.5	12.4	13.9
70 ,,	8.6	9.1	7.9	8.1	7.4	8.0	8.1	8.3
80 "	5.2	5.6	4.4	4.5	3.9	4.3	5.2	5.4
90 "	2.8	8.1	2.4	2.7	2.4	2.8	2.9	3.1

# C .- IMPROVED EXPECTATION IN ENGLAND (HUMPHREYS).

	Ages.				Per	ons.	M	ale.	Female.		
	v.R.	<b>.</b>			1838-54.	1876-80.	1838-54.	1876-80.	1838-54.	1876-80.	
0	years			_	40.86	43.56	39.91	41.92	41.85	45-25	
5	٠,,				50 02	52.56	49.71	51.47	50.33	53.65	
10	"				47.36	49.24	47.05	48-16	47.67	50.32	
15	"				43.54	45.05	43.18	43.94	43.90	46.15	
20	"				39.88	40.98	39.48	39.86	40.29	42.10	
25	"				36.57	37:21	36.12	36.05	37-04	38-36	
35	"				29 99	30.01	29.40	28.88	30.59	31.12	
45	"				23.41	23 29	22.76	22.34	24.06	24.21	
55	"				16.94	16.75	16 45	16.09	17.43	17:37	
65	,,				11.17	11.19	10.82	10.79	11.51	11.55	
75	**				6.72	6.81	6.49	6 52	6.93	7.04	
85	", ipwar		and	1	8.87	4.00	8.73	3.78	3.98	4 15	

# LIFE.

# 284

# D.—Expectation according to Condition.

					~	
Age.		G	entry.	Farm Labourers,	Sober.	Intemperate.
20			88	48	40	14
30	•		31	41	34	13
40	•		24	83	27	10
50			18	25	20	8
60			12	18	14	6

Years to Live.

# E.—Expectation according to Profession (England).

# Will Reach 70 Years of Age.

Physicians Teachers Artists .	•		:	Per Cent. 24 27 28	Lawyers Clerks . Soldiers	:	:	Per Cent. 29 32 32	Merchants Farmers . Clergy	•	Per Cer 3; . 4(	it. 3
TF Ave	m to	•	. 3.7	T	a Avenac		70/	 Doo	wecotovo /	Rα	larena e	

# F.—American Life-Average for Professions (Boston).

Shopmen .		Years. 41.8	Mechanics			•	Years, 47.3
Waggoners		43-6	Merchants			•	48-4
Labourers.		44.6	Lawyers .		•	•	52 <del>-6</del>
Seamen .	•	46.1	Farmers .	•		•	64-2

# G .- Improved Survivals in England (Humphreys).

	Peri	ons,	Ma	les,	Females.		
Ages.	1838-54.	1876-80.	1838-54.	1876-80.	1838-54.	1876-80	
No. born	1000.0	1000-0	1000-0	10000	1000-0	1000-0	
5 years.	736-8	750-9	723.7	736-4	750-6	766-0	
10 ,, .	702.5	726.8	689-9	712.1	715.8	7420	
15 ,, .	684.6	714.5	672.8	700.1	696-9	729-3	
20 ,, .	662.8	699.1	651-9	684-9	674.1	713.8	
25 , .	634-0	677.5	624-2	663-8	644.3	691.7	
85 , .	572-0	623.1	564-4	608-1	579-9	638-7	
45 ,, .	502-9	550.5	495-8	530-8	510-4	571-0	
55 ,, .	421.1	462.1	409-5	435-3	433.3	489-9	
65 , .	309-0	833.4	294-6	303 9	324-2	363-9	
75 , .	161.1	173.1	148-1	151.5	174.8	195-5	
85 , .	386	42.1	<b>3</b> 3-0	33-9	44.4	50.7	
95 ,, .	2.2	2.6	1.6	1.7	2.7	8-5	

II.—Table of Survivals of 1000 Persons Born.

	Age 10.		Age 80.		Ag	e 50.	Age 70.	
	Male,	Female.	Male.	Female.	Male.	Female	Male.	Female.
England	364	862	305	299	233	231	114	124
France .	384	847	287	297	233	240	120	129
Belgium	342	350	283	288	202	208	90	110
Prussia.	813	326	274	288	213	225	97	109
Spain .	272	288	224	239	188	199	104	121
Norway	886	394	839	852	278	292	163	186

# I.—Kasper's Table of Rich and Poor.

#### Survival of 1000 Born.

Age.			Rich.	Poor.	Age.		Rich.	Poor.
5	•	•	948	655	40		695	896
10			938	598	60		398	172
20			886	566	70		235	65

LIFE-ANNUITIES.—This system of insurance is common in France, where the annuity-fund in 1881 amounted to 16 millions sterling, and the new annuities purchased yearly average a capital value of £900,000. The annuities now running average as follows:—

		Per Annum.			A	Per nnum.
Military officers.		. £95	Physicians			£56
Naval do	•	. 90	Farmers .			40
Men of property		. 62	Workmen			36
Civil service .		. 60	Servants.			26

See Insurance.

LIFEBOATS.—There are 272 in the United Kingdom, maintained by voluntary donations amounting to £43,000 per annum. They are manned by 12,000 voluntary seamen, the coxswain alone being paid, to mind the boat. Since their establishment in 1824 these boats have saved 29,608 lives, and in 1882 they saved 23 vessels and 884 lives.

Lifeboats were established in France by the Empress Eugenie in 1866, and are now in use at 37 exposed points of coast.

#### LIFE-INSURANCE. See Insurance



#### 286 LIGHT—LIGHTNING.

LIGHT.—It requires 50 lbs. of tallow candles to produce as much light as 1000 cubic feet of gas. Dr. Frankland's table (1866) of the cost of light was as follows:—

					(		10 Hours
One gallon	paraffi	n oil		•		6 p	ence
Equivalent		it of	gas			8 -	,,
38 tallow ca	ındles		•			<b>32</b>	99
16 paraffin	**		•			46	11
20 sperm	"					84	11
24 wax	"			•	•	87	**

The electric light has been found at the Kensington Museum to cost much less than gas. See *Electric*.

LIGHTHOUSES.—The number has quadrupled since 1830, viz.:—

			1830.	1840.	1870.	1880,
United Kingdom			260	817	410	556
France			63	138	210	291
Germany			20	22	24	25
Russia			18	63	85	103
Italy			10	55	121	145
Spain and Portugal			15	22	108	151
Belgium and Holland			12	36	73	115
Scandinavia .			180	196	205	207
Greece and Turkey	•	•	85	88	77	114
Europe			613	887	1,313	1,707
United States .			130	220	413	632
Canada			38	41	400	451
Spanish America			15	17	38	44
West Indies			40	43	104	110
Africa			20	23	57	98
Australia			10	12	45	102
Asia			30	32	149	162
Total .			896	1,275	2,519	3,301

# LIGHTNING, KILLED BY.

			Per 100,000 Deaths,	1			Per 100,000 Deaths.
England . France .		23 92	4·4 10·2		Germany Russia		15·1 36·3

The number has fluctuated in England as follows:-

		Α.	nnum Aven	Ratio in	
Years.		Males.	Females.	Total.	100,000 Deaths.
1850-59		16	5	21	4.8
1860-69		10	8	13	2.7
1870-79	•	19	4	23	4.4



#### LINEN.

#### LINEN.

# A.—LINEN MANUFACTURE OF ALL NATIONS.

		Value or			
	Spindles.	Power- Looms.	Flax, Tons.	Product, Millions &	
United Kingdom	. 1,485	45	107	12.0	
France	. 762	23	66	8-0	
Germany	. 827	8	85	4.0	
Russia	. 145	2	40	4-0	
Austria	. 415	5	60	7-6	
Italy and Switzerland	64	1	10	1.2	
Belgium and Holland	296	6	80	3.8	
United States .	. 18	7	20	2.6	
Total .	. 8,507	97	868	43.1	

#### B.—LINEN MANUFACTURE IN IRELAND.

Year.	Million Yards.	Value.	Pence per Yard.	Value of Manufacture per Inhab.		
<b>1726</b> .	41	£205,000	9.6	26 pence		
1766 .	18	1,080,000	14.5	99 ,,		
1806 .	44	2,220,000	12.2	102 ,,		
1836 .	71	2,631,000	9·1	76 ,		
1880 .	169	5,555,000	7.9	258 "		

The abolition of the "bounties," in 1833, was followed by a great increase of production, and the introduction of steam-power by Messrs. Mulholland had a further happy effect. The number of power-looms has risen from 30 in 1857 to 19,200 in 1883.

# C.-Linen Industry of United Kingdom.

Year.	Flax Con- sumed, Million Lbs.	Linen Made, Million Yds.	Exported, Million Yds.	Yarn Export, Million Lbs.	Value of Total Manufacture,
1806	. 48	74	8	•••	£3,820,000
1820	. 87	131	40	•••	5,880,000
1830	. 138	206	62		7,615,000
1840	. 210	285	87	16	10,790,000
1850	. 248	344	120	18	12,624,000
1860	. 228	290	144	31	11,418,000
1870	. 291	413	226	13	15,190,000
1881	. 227	310	174	18	11,705,000

# D.—Linen Factories of United Kingdom (1879).

			No. of actories.	Spindles.	Power- Looms.	Operatives.
England .			101	191,000	4,100	15,000
Scotland .			155	265,000	16,800	87,000
Ireland .			144	809,000	19,600	56,000
United K	ingdo	m.	400	1,265,000	40,500	108,000



### 288 LIQUOR DUTIES—LIVING.

### LIQUOR DUTIES.

А	١.

	,	T	Amount,	Shillings Per Inhab.		Amount, Thousands &.	Shillings Per Inhab.
England .			19,406	15	Italy	1,116	1
Scotland .			4,092	22	Holland .	1,827	9
Ireland .	,		3,156	13	Belgium .	1,802	7
U. Kingdom	١,		26,654	16	Sweden .	813	4
France .			15,712	9	Norway .	246	8
Germany .	,		5,728	8	Denmark .	204	2
Russia			27,808	7	Japan	1,195	1
Austria .			4,423	2	U. States .	17,700	7

### B.—LIQUOR DUES IN UNITED KINGDOM.

Thousands of &

England Scotland Ireland .	• •	· ·	•	Malt. 6,025 365 877	British Spirits. 8,475 8,162 2,591	Imported Wines, &c. 4,906 565 188	Total. 19,406 4,092 8,156
United E	Kingd	om		6,767	14,228	5,659	26,654

The liquor trade in the United Kingdom employs 846,000 persons, and a capital of 117 millions sterling.

### LIVING, COST OF.

### A.-DAILY EXPENDITURE.

	Pence per Inhabitant.						
	Food.	Clothing.	Rent.	Taxes.	Sundries.	Total.	
United Kingdom.	9.0	2.6	2.2	2:4	4.6	20.8	
France	7-0	2.2	1.8	2.7	1.7	15.4	
Germany	6.5	1.8	1.2	1.9	1.4	12.8	
Russia	4.1	10	0.4	0.8	0.3	6.6	
Austria	5.8	1.6	0.8	1.2	0.7	10.1	
Italy	4.2	1.0	0.6	1.4	0.4	7.6	
Spain	4.6	1.2	07	1.5	0.4	8.4	
Belgium & Holland	6•7	2.1	1.1	17	2.2	13.8	
Scandinavia	6.0	1.6	0.9	1-2	1.4	11.1	
Europe	6-0	1.6	1.1	1.6	0.9	11-2	
United States	7.0	8.1	1.8	2.0	1.7	15-6	
Average	6.1	1.9	12	1.7	1.3	12-1	

### LIVING.

289

# B.—Gentleman's Family in London.

			1792.	1823.	1845.	1883.
Rent			£60	£90	£100	£120
Taxes .			18	40	80	- 40
Servants	(2) .		18	24	30	40
Clothing	٠.		60	70	. 80	100
Bread			25	26	25	20
Meat			25	30	50	80
Groceries			22	35	40	60
Wines			23	89	40	40
Dairy		-	50	70	70	90
Coal and	light		30	38	30	25
Washing			16	22	80	40
Sundries			58	81	95	110
	Total		£405	£565	£620	£765

### Family of 5 persons, besides 2 servants.

### C.—TRADESMAN'S FAMILY (BRISTOL).

Rent . Clothing Bread	:	:	:	1792. £10 10 20	1878. £15 12 21	1845. £18 12 • 20	1883. £20 15 16
Meat Groceries Sundries	:	:	:	10 10 10	14 15 13	20 20 15	28 22 19
	То	tal		£70	£90	£105	£120

### D.-English Labourer and Mechanic.

		Labourer.	Mechanic.			
	1792.	1823.	1883.	1792.	1823.	1883.
Bread, meat, &c.	£16	£17	£20	£18	£20	£22
Groceries,	2	8	5	4	6	8
Rent	2	3	4	3	4	6
Clothing, &c	7	8	8	17	22	24
Total .	£27	£31	£37	£42	£52	£60

### E.—Relative Class Expenditure (1880).

	1	France.		Germany.		
	Rich.	Middle.	Working.	Rich.	Middle.	Vorking.
Food	41	53	57	42	58	62
Rent	15	23	30	10	18	23
Sundries	44	24	13	48	24	15
Total .	100	100	100	100	100	100



290

#### LIVING.

### F.—Cost of Workmen's Food (1880).

		Shillings	per Week.	Food. Ratio.	
		Wages.	Food.	per Cent.	
Great Britain	n.	31	14	45	
France .		21	12	57	
Germany .		16	10	62	
Belgium .		20	12	60	
Italy		15	9	60	
Spain		16	10	62	
United State	. 8	48	16	83	
Australia .		40	11	28	

### G.—ARTISAN'S FAMILY IN PARIS (1882).

		Weekly I	Szpenditure.	
				Per Annum.
Bread .		40 lbs.	90 pence	£19 10 0
Meat, fish .		10 "	63 "	18 10 0
Cheese .		2 ,,	18 "	8 18 0
Milk		7 pints	21 ,,	4 10 0
Wine		7 ,,	85 ,,	7 12 0
Vegetables.		14 lbs.	21 "	4 10 0
Coffee .		1 lb.	14 ,,	8 0 0
Sugar and salt		•••	7 ,,	1 10 0
Fuel and light		•••	10 ,,	2 3 0
Clothing .		•••	24 ,,	5 4 0
Rent, 2 rooms	•	•••	30 "	6 10 0
Total		•••	£1 7 9	£71 17 0

An artisan and wife earn usually £78 per annum.

### II.—Cost of Living in France and in Paris.

		Per A	num.	Rat	Ratio.			
Ye	a <b>r</b> .	France.	Paris.	France.	Paris.			
1789 .	•	 £15	£29	100	192			
1826 .		16	41	100	255			
1840 .		19	48	100	251			
1860 .		44	114	100	260			
1880 .		51	135	100	265			

### I.—Russian Fisherman's Family.

		(Ro	oubles =	: 28. each.)				
Inco	ME.	1	Roubles.	Ex	PENI	DITURE	E.	Roubles.
Game, 200 lbs.		•	25	Rye, 1 ton				70
Caviar, 200 "	•		25	Taxes .	•	•	•	23
Fish	•	•	50 25	Clothing Sundries	•	•	•	25
Wood cutting	•	•		bunaries	•	•	•	
To	tal		125		To	tal		125

#### LLAMAS-LOANS.

291

### K.—French Noble Family (1679).

Mest .	•			House Expenses. £44	Food, &c.		•		Per Annum. £240
Bread .				20	Rent .				40
Wine .	•			20	Wages .				40
Butter .				86	Opera, &c.			•	1 <del>2</del> 0
Sundries		•	•	120	Dress, &c.	•		•	160
	To	tal		£240		T	otal		£600

Family comprised the Count, Countess, 7 male and 3 female servants; and Mme. de Maintenon writes to the Countess, "My dear sister, you can live like a princess on £600 a year."

LLAMAS.—There are 4 millions in Peru, mostly employed as beasts of burden. The skin weighs 6 lbs., gives 18 feet of leather, and is worth 20 shillings.

#### LLOYD'S .- See Insurance,

LOANS.—The total of foreign loans quoted on the London Stock Exchange in 1825 amounted to no more than 105 millions sterling. They have increased 22-fold.

#### A.—Loans Quoted in 1881.

#### Millions £.

Australia			94	Egypt .			84	Paraguay	8
Austria			237	France .			801	Peru	82
Belgium			27	Germany			30	Portugal	38
Brazil .			22	Greece .			11	Russia	145
Canada .			28	Holland .			80	River Plate .	24
Ceylon .			1	Honduras			8	Roumania .	1
Chili .			7	India			83	Spain	176
China .			2	Italy			290	Sweden	8
Colombia			10	Japan .			2	South Africa .	12
Costa Rica	В.		8	Mexico .			28	Turkey	144
Denmark			1	Norway .	•	•		United States	804

The above amounts do not represent in all cases the whole of the external debt, much less the entire public debt of the various countries, for which see *Debt*.

The total of British capital in foreign loans and railways is estimated to be 1058 millions sterling. See *Investments*.



Ź93

#### LOANS.

### B.—British War Loans (1756-1816).

Years.	Nom. Amount.	Realised.	Annual Charge.
1756-63	60,670,000	59,500,000	2,315,000
1776-84	114,687,000	92,700,000	5,012,000
1785-1816 .	618,404,000	488,000,000	23,387,000
60 years .	793,761,000	585,200,000	80,714,000

The first series, ending 1763, was for the conquest of Canada, the average interest being 3.9. The second, ending 1784, was for the war in the United States, and the third mostly for the wars against Buonaparte, the interest in both cases averaging 5.4 on the net amount.

#### C .- LOANS GUARANTEED BY BRITISH GOVERNMENT.

	Original Sum.	Balance in 1881
Russian Dutch .	. £2,000,000	£650,000
Canada	6,300,000	6,300,000
New Zealand .	. 2,000,000	2,000,000
Turkey	. 5,000,000	3,800,000
Greece	. 800,000	•••
West Indies .	. 886,000	<b>359,000</b>
Irish Church .	. 10,700,000	7,400,000
Board of Works	. 7,930,000	1,388,000
Total .	£35,616,000	£21,897,000

#### D.-French Loan of 1872.

#### Subscribed Millions £.

Paris .				510	England		280
Departments				155	Germany		180
Belgium .		•	•		Italy and Switzerland	•	39
Holland .	•	•	•	112	Other countries	•	117

The subscriptions amounted to twelve times the required sum.

### LOCOMOTIVES-LODGINGS IN PARIS.

#### LOCOMOTIVES.

	W	Annual Traffic	per Locomotive.
	Number in 1880.	Passengers.	Goods, Tons.
	. 13,480	97,800	31,500
United States .	. 17,790	22,200	23,600
Germany	. 9,400	43,000	80,100
T-nno	6,220	51,600	21,200
Austria	. 8,600	18,800	25,800
Russia	. 3,560	20,500	16,500
Italy	. 1,900	85,200	9,700
Other countries	. 7,460	85,400	14,700
Total	. 63, 320	48,030	25,400

For passenger trains a locomotive burns one ton of coke per 80 miles, and for goods trains per 40 miles. The consumption in the United Kingdom is equal to 6 million tons of coal per annum, and the railways of the world burn 25 million tons, although wood is used in some countries. An ordinary locomotive, say 300 horse-power, will cost £2000, and during its life run about 200,000 miles, say 13,000 miles per annum for 15 years. One house at Berlin, that of Mr. Borsig, has turned out 4000 locomotives since 1840, in which year Mr. Borsig began with a capital of £1500, lent him by a friend: he employs 10,000 workmen.

The most powerful locomotives in the world are on the Chicago railway: 50 tons weight, 61 feet long, tender 3000 gallons, cylinder 18 × 24 inches, with 6 feet driving-wheel.

LOCUSTS.—In Russia 600 soldiers can sweep one ton of locusts into ditches per day, and destroy them. In Cyprus the peasants destroy annually 60 tons of locust eggs, equal to 680 million locusts, at a cost of £2400, say £40 per ton.

**LOCUST-TREE.**—The carob or algarroba covers 19,000 acres in Cyprus, averaging 30 trees per acre. Average crop 25,000 tons, worth £75,000, most of which goes to Scotland to be made into whiskey.

#### LODGINGS IN PARIS.

Ordinary Rent per Annum.

				 	~~~	po. Am	чш.			_	
		Unfurnish	ed.		ĭ `	Fur	nishe	d (Bo	ule	varde	١.
1 1	room	, suburbs		£8	3	rooms,	5th	flat		•	£160
2 1	room	5, ,,		12	3	,,	4th	**			200
2	,,	Passy		15	3	"	3d	••			250
2	••	Madelein	е	20	3	"	2d	"			300
2	99	R. Rivoli		30	4	"	R.	Rivo	li		400
3	**	••		50	5	••		••			600

LONDON.

#### 294

#### LONDON.

#### A.—Growth of London.

Year.		Thouse	nds.	Miles of	Value o	Value of House Property.				
i car.		Population.	Нопаев.	Streets.	Millions &.	Per House.	Per Inhab			
1801		959	180	470	67	£513	£70			
1811		1,139	155	560	82	528	72			
1821		1,379	170	610	96	567	70			
1881		1,655	197	700	124	630	76			
1841		1,948	256	905	174	677	89			
1851		2.362	801	1,050	229	762	97			
1861		2,804	369	1,290	306	828	110			
1871		8,254	445	1.550	484	975	133			
1881		8,815	520	1,740	601	1.156	158			

#### B.—Comparison of London and Paris.

Year.	Popul Tuous		Increase po		Ratio to Population of Nation.		
1	London.	Paris.	London.	Paris,	London.	Paris,	
1801	959	553			6.11	2.01	
1821	1,379	724	21	8	6-60	2.40	
1841	1,948	935	29	11	7:21	2.73	
1851	2,362	1,053	41	12	8.60	8.01	
1861	2,804	1,696	44	61	9.67	4.67	
1871	3,254	1,761	45	7	10.30	4.75	
1881	3,815	2,226	56	46	10-90	5.87	

London has 11,040 police, 11,260 cabs, and 1620 omnibuses: the cabs and busses carry 73 million passengers yearly. The meat consumption includes 330,000 oxen, 2,100,000 sheep, and amounts altogether to 210,000 tons per annum. There are 220 deaths and 360 births daily, being a natural increase of 140 persons, but the increase of population averages 200 daily, the difference being caused by immigration. Of all deaths 21 per cent. occur in hospital, and almost 4 per cent. (3.7) are violent deaths, say 10 daily. There are 5550 coroners' inquests yearly, and 3580 persons killed or wounded by cabs. About 120 adults are missing every year, and 50 dead bodies are not identified. The number of stray dogs taken up is 29,500 per annum. The commerce of London in 1882 was a little over 200 million sterling—that is, imports and exports.

For municipal expenditure, &c., see Finances, Table K.

LORDS.—The House of Lords comprises 4 princes, 23 dukes, 19 marquises, 139 earls, 32 viscounts, 26 bishops, and 272 barons; in all 515 members.

LOTTERIES.—The Spanish lottery gave a net profit of £403,000 in 1882.

The Italian and Austrian lotteries produced as follows:—

	Tta	aly.	Au	Austria.			
Receipts Expenses	1868. £2,420,000 1,670,000	1877. £2,705,000 1,713,000	1868. £1,380,000 850,000	1877. £2,172,000 1,160,000			
Profit	£750,000	£992,000	£530,000	£1,012,000			

#### LUXURIES.

### A.—Consumption in the United Kingdom.

-	Qu	intity, Mill	Value, Millions £.			
	1860.	1870.	1880.	1860.	1870.	1880.
Wine, gallons .	7	15	16	2.2	4.1	60
Tea, lbs	78	120	161	5.9	9.0	8.8
Coffee, "	36	31	32	1.2	0.8	1.3
Sugar, "	957	1,740	2,239	12.4	17.6	22.2
Tobacco, "	36	41	49	1.1	1.6	2.0
Total				22.8	33.1	40.3

#### B .- RATIO PER INHABITANT.

		Quantity.	Value, Penco.			
	1860.	1870.	1880.	1860.	1870.	1880.
Wine, gallons .	0.25	0.48	0.45	18	32	46
Tea, lbs Coffee, ,,	2·70 1·25	3·80 1·0	4 55 0 92	48 10	70	67
Sugar, "	83.0	55.0	64·0 23·0	105	135	155
Tobacco, oz	20.0	21.0	230	-	12	15
			l	190	255	293

### M

#### MACHINERY.

1. A sewing-machine does the work of 12 women. The United States export 105,000 of these machines yearly.

2. A Boston "bootmaker" will enable a workman to make 300 pairs of boots daily. In 1880 there were 3100 of these machines working in various countries, turning out 150 million pairs of boots yearly.

3. Glenn's California reaper will cut, thresh, winnow, and

put in bags the wheat of 60 acres in 24 hours.

4. The Hercules ditcher, Michigan, removes 750 cubic

yards or 700 tons of clay per hour.

5. The Darlington borer enables 1 man to do the work of 7 in making a tunnel, and reduces the cost to one-third of work done by hand; it also permits a week's work to be done in 2 days. See *Tunnels*.

MADDER.—The best is grown near Avignon, on irrigated lands, for which the tenants pay £5 an acre rent. Average crop, 2 tons per acre, worth £50, leaving small profit to the cultivator.

MAIZE.			Λ.		
			Acres.	Million Bushels,	Per Acre.
United State	s .		62,550,000	1.470	231
Austria .			5,400,000	84	16
Italy			4,200,000	85	20
Spain and Po	rtugal		2,000,000	50	25
Canada .	•		700,000	20	30
Australia .		•	200,000	6	30
Total .			75,050,000	1,715	23

No crop suffers less from drought, or gives better returns in a suitable climate. The yield in Paraguay and Brazil often reaches 300 for 1.

#### B .- MAIZE CROP OF UNITED STATES.

Year.			llion shels.		Year.				Million Bushels.
1850		. 5	92	ĺ	1870	•			761
1860		. 8	39	1	1880		•	•	1,755

It is mostly used for fattening pigs.

### MALT—MANUFACTURES.

297

#### MALT.

### A .- Consumption in England, per Annum.

Period,				Million Bushels.	Duty, Pence.	Bushels per Inhab.
1700-20 .				19.2	6	8.4
<b>1720-50</b> .				26.7	6	4.2
17 <b>60</b> -80 .				27.6	9	8.6
<b>1790</b> –1800				18.0	16	2·1
1810-20 .				23.7	50	2.2
18 <b>30</b> -50 .		•		82.7	81	2·1
1850-70 .	•		•	<b>89·</b> 8	31	1.9

#### B.—Consumption in United Kingdom.

	Mi	llion Bush	Bushels per Inhabitant.			
	1850.	1864.	1881.	1850.	1864.	1881.
England	28.2	88.7	44.4	1.57	1.84	1.71
Scotland Ireland	1·0 1·2	2·2 2·7	2·7 2·8	0·34 0·18	0·71 0·49	0.73 0.54
U. Kingdom .	30.4	43.6	49.9	1.10	1.45	1.43

#### MANUFACTURES.

### A .- TEXTILES AND HARDWARE.

	Valu	te, Millions	E.		Raw Material, Lbs. per Inhab.		
	Textiles.	Hardware.	Total.	Fibre.	Iron.	ture per Inhab.	
U. Kingdom .	195	127	322	71	420	£9·1	
France	111	42	153	28	122	4.0	
Germany	70	51	121	22	126	2.7	
Russia	54	13	67	7	18	0.8	
Austria	41	11	52	8	30	1.5	
Italy	20	8	23	6	8	0.8	
Spain	20	4	24	9	15	1.5	
Belgium	21	15	36	54	303	7.0	
Holland	5	3	8	19	92	20	
Switzerland, &c.	13	6	19	8	65	1.5	
Europe	550	275	825	19	80	2.7	
United States .	122	83	205	24	241	4.0	
Total	672	358	1,030	20	104	2.9	

### MANUFACTURES.

### B .- TEXTILE MANUFACTURES.

		Millions &.							
	Cottons.	Woollens.	Linens, &c.	Silks.	Sun- dries.	Total.			
U. Kingdom .	95	46	21	7	26	195			
France	20	43	9	27	12	111			
Germany	24	26	5	7	8	70			
Russia	18	23	5	2	6	54			
Austria	13	11	8	4	5	41			
Italy	8	5	1	3	8	20			
Spain	9	8		1	2	20			
United States .	54	43	4	6	15	122			
Other countries	13	10	7	4	5	39			
The World .	254	215	60	61	82	672			

### C.—RISE OF BRITISH MANUFACTURES.

			Value in Millions £.					
			1830.	1850.	1860.	1870.	1881	
Cottons		. !	31	43	78	94	95	
Woollens		. 1	23	29	38	55	46	
Linen, &c		.	9	17	17	28	21	
Silks		.	8	10	18	16	7	
Sundries		.	7	10	17	22	26	
Textiles .			78	109	168	215	195	
Hardware .	•		31	42	65	82	127	
Total			109	151	233	297	322	

### D.—Consumption of Fibre (United Kingdom).

	car			Lhs. per					
1	car	•	Cotton.	otton. Wool.   Flax.   Hemp.   Jute.   Tota'.					Innab.
1801			 54	77	48	82		261	16
1810			114	83	60	107		364	20
1820			123	85	87	85	•••	380	18
1830			246	110	138	59		553	23
1840			448	129	210	67	•••	854	32
1850			565	158	249	122	42	1,136	41
1860			1,140	224	228	78	86	1,756	61
1870			1,101	309	291	160	324	2,185	68
1880			1,404	338	227	165	404	2,538	70
1882			1,519	384	236	181	512	2,780	78

### E-RAW MATERIAL AND MANUFACTURES (U. KINGDOM).

	l	Value in Millions &.										
Year.	Re	w Mater	ial.	Me	Manufactures.							
	Cotton.	Wool	Both.	Cottons.	Woollens.	Both.	Material (per cent.					
1820	7	8	15	27	20	47	32					
1830	7	9	16	32	23	55	30					
1840	11	10	21	38	27	65	82					
1850	17	12	29	42	30	72	40					
1860	81	15	46	79	37	116	39					
1870	46	18	64	93	55	148	44					
1881	89	19	58	95	46	141	41					

#### F.—British Manufactures in 1881.

		Val	ue, Million	· &	Shillin	gs per Inh	bitant.
		Produc-	Consump- tion.	Exporta-	Produc- tion.	Consump- tion.	Exporta-
Cottons .	•	95	25	70	54	14	40
Woollens .		46	26	20	26	15	11
Linen, &c.		21	11	10	12	6	6
Silks		7	4	3	4	2	2
Sundries .	•	26	16	10	15	9	6
Textiles		195	82	113	111	46	65
Hardware	•	127	78	49	73	45	28
Total .		322	160	162	184	91	93

### G.—Foreign Customers for British Manufactures.

	Perc	entage acc	ording to \	alue.
Exported to	1860.	1870.	1880.	1882.
British colonies .	. 82	26	34	35
United States .	. 16	14	14	13
European continent	. 34	38	85	86
Other countries .	. 18	22	17	16
Total	. 100	100	100	100

For particulars see Commerce.

### H .- THREE EPOCHS OF BRITISH TEXTILE MANUFACTURES.

		Thousan	ds.		** 1 4		
		Operatives,	Power- Looms,	Raw Fibre, Million Lbs.	Value of Manufacture, Millions &		
1835		. 853	116	<b>633</b>	86		
1850		. 596	802	1,136	109		
1880		. 976	725	2.528	195		

#### L-British Manufactures in 1782 and 1882.

			housands tted).	Ra	tio.	Shillings per Inhabitant	
		1782.	1882.	1782.	1882.	1782.	1882.
Cotton goods .	_	£960	£95,200	1.7	11.6	2	54
Woollen , .		16,800	46,400	29.5	5.5	84	26
Linen ,, .		1,750	11,770	3.1	1.4	8	7
Silk ".		3,350	7,230	5.9	0.9	7	4
Leather		10,500	34,030	18.4	4.2	21	19
Iron and steel.		12,100	127,000	21.4	15.4	24	73
Sundries	•	11,200	496,670	20.0	61.0	23	282
Total		£56,660	£818.300	100.0	100.0	114	465

### M'Pherson's table for 1782 did not include Ireland.

# K.—MANUFACTURES IN UNITED STATES, VALUE. Millions & Per Inhab. | Year. Millions & Per

Year. 1830 1840 1850	•	:	illions &. 22 97 211	Per Inhs £1.8 5.7 9.1		Year. 1860 1870 1880	:	•	:	377 846	£12.2 21.2 22.0
		_ •		Million	~	erling.					Operatives,

						(Meratives,
		Capital	Wages.	Raw Material.	Product.	Thousands
1850		110	49	116	212	957
1860		208	80	214	394	1,311
1870		441	161	510	846	2,054
1880		581	198	708	1,112	2,739

The above includes not only textiles and hardware, but flourmills, saw-mills, and other industries not counted in Europe.

### I .- PRINCIPAL AMERICAN MANUFACTURES.

	Valu	e, Millio	ns £.	Per	Per Inhabitant.			
	1860	1870.	1880.	1860.	1870.	1890.		
Flour	52	95	118	£1.6	£2.5	£2·3		
Leather and boots .	33	56	73	1.1	1.5	1.4		
Lumber	22	77	56	0.7	2.0	1.1		
Carpentry	18	48	54	0.6	1.2	1.1		
Cottons	24	41	54	0.8	1.1	1.0		
Woollens	13	26	43	0.4	0.7	0.8		
Clothing	23	45	56	0.8	1-2	1.1		
Machinery	12	24	52	0.4	0.7	1.0		
Liquor	35	48	29	1.1	1-2	0.6		
Sundries	162	386	577	5.2	9-9	11.6		
Total .	394	846	1,112	£12·7	£220	£22·0		

### M.—THIRTY YEARS OF AMERICAN MANUFACTURES.

~	01	perative	, Thous	anda.	Wages, Millions &.				
State.	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.	
New York .	199	230	351	501	10-2	13.5	29.5	41.4	
Pennsylvania	147	222	819	387	7.7	12.5	26.6	27.8	
Massachusetts	178	217	279	352	8.8	11.8	24.6	26-6	
Ohio	51	76	138	184	2.7	4.6	10-2	12-9	
Illinois	12	23	83	145	0.6	1.6	6.4	11.8	
New Jersey .	88	56	75	126	1-9	8.3	6.8	9.6	
Connecticut .	51	64	90	113	2.5	3-9	8.1	9.1	
Other States .	281	423	719	931	14.6	28.8	48.8	58.8	
Total	957	1.311	2,054	2,739	49.0	80.0	161.0	198.0	

### Millions & Sterling.

_		Ca	pital.		Product.				
State.	1850.	1860.	1870. 1880.		1850.	1860.	1870.	1880.	
New York .	21	35	77	107	50	79	157	224	
Pennsylvania	20	39	85	99	32	60	143	155	
Massachusetts	18	28	48	64	33	53	111	131	
Ohio	6	12	29	40	13	25	54	73	
Illinois	1	6	20	29	3	12	41	86	
New Jersey .	5	8	16	22	8	15	34	53	
Connecticut .	5	9	20	25	10	17	82	39	
Missouri	2	4	16	15	5	9	41	34	
Michigan	1	5	15	19	2	7	24	81.	
California	1	4	8	12	3	14	13	24	
Other States .	80	58	107	149	53	103	196	262	
Total	110	208	441	581	212	394	846	1,112	

### Ratio per Operative.

<b></b>		Wa	ges, £.		Product, £.				
State.	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.	
New York .	51	59	82	83	250	340	440	448	
Pennsylvania	52	56	83	72	220	267	444	400	
Marsachusetts	49	54	88	76	180	240	400	370	
Ohio	54	61	74	70	255	334	380	<b>39</b> 5	
Illinois	50	70	77	80	250	500	490	593	
New Jersey .	50	59	90	76	210	270	450	420	
Connecticut .	49	61	90	81	196	270	850	344	
Other States .	52	<b>6</b> 8	68	63	225	316	382	374	
Gen. average .	51	61	79	72	220	300	415	403	

### MANUFACTURES-MANURE.

### N.—American Manufactures in Groups of States.

	OI	Operatives, Thousands.					Wages, Millions £.			
State.	1850.	1860.	1870.	1880,	1850.	1860.	1870.	1880		
New England	. 313	390	526	645	16	22	44	48		
351.1.11-	418	542	801	1,102	21	31	67	83		
Southern .	. 104	126	187	228	4	7	9	11		
Western .	. 108	184	499	669	6	12	38	50		
Pacific .	. 14	69	41	95	2	8	3	6		
Total	. 957	1,311	2,054	2,739	49	80	161	198		

### Millions £ sterling.

10.00		Cap	ital.	- 1	Product,				
State.	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.	
New England	34	54	102	130	59	98	201	230	
Middle .	49	89	187	243	98	166	354	460	
Southern .	13	23	29	40	20	39	57	70	
Western .	13	35	109	150	30	71	217	326	
Pacific .	1	7	14	18	5	20	17	26	
Total	110	208	441	581	212	394	846	1,112	

#### Ratio per Operative.

0.0				Wages.				Product.				
State	1850.	1860.	1870.	1880,	1850.	1860.	1870.	1880.				
New Engl	and		£51	£56	£84	£75	£190	£252	£390	£360		
Middle			50	57	84	73	230	306	440	420		
Southern			40	55	48	48	192	303	305	310		
Western			55	65	76	75	275	390	434	490		
Pacific			140	120	75	63	360	290	420	275		
Union.			51	61	79	72	220	300	415	463		

#### MANURE

302

### A .- Annual Production per Animal

Cow		6 tons. 5 " 2 "	Pig		80 cwt
Horse		5 "	Sheep	•	14 "
Ass		2 "	Goat	•	10 💂

#### MANURE-MARRIAGES.

#### B.—Production in Countries.

						Million Tons.	Tons per Arable Acre.
United Kir	gdo	m				103	2.2
France	:					112	17
Germany						132	2.0
Russia						273	1.4
Austria						116	2·1
Italy .						81	1·1
Spain .						42	1.9
Portugal					•	7	1.8
Holland						11	2.2
Belgium				•	•	10	2.0
Denmark						11	1.9
Sweden and	l No	way.		•		24	1.6
		_					
			Eur	ope	•	872	1.8

The above forms the chief ingredient in farm-yard manure, being mixed with straw, &c. The quantity of farm-yard manure used per acre is 13 tons in Great Britain, 45 in Belgium, 14 on the estates of Russian nobles, and 7 on the lands of Moujiks or peasant-farmers in Russia. In France fish is often used. In Norfolk likewise the farmers buy fish at 16 shillings per ton, mix it with mould as 1 to 40, and obtain heavy crops of turnips.

MARBLE.—Is worth about £4 per ton, Italy exporting annually 105,000 tons, valued at £400,000. It is 7 per cent heavier than stone, and 5 per cent lighter than granite. One cubic foot weighs 160 lbs., that is, 14 cubic feet per ton.

MARMALADE.—Dundee consumes 6000 chests of bitter oranges yearly, and exports 3 million pounds of marmalade.

#### MARRIAGES.

#### A.—Number per 1000 Inhabitants per Annum.

	1861-70.	1871-80.	20 yrs.		1861-70.	1871-80.	20 yrs.
U. Kingdom	7.66	7.60	7.63	Austria	8.65	8.55	8.60
France	7.95	7.95	7.95	Hungary .	10.50	10.30	10.40
Germany .	8.85	8.85	8.85	Switzerland	7.65	7.65	7.65
Holland	8.15	805	8.10	Italy	7.55	7.65	7.60
Belgium	7.40	7-20	7:30	Spain	7.55	7.55	7.55
Denmark .	7.60	7.80	770	Australia .	8.00	7.00	7.50
Sweden	6.80	6.80	6.80				

The ratio of persons marrying will be of course double the above, each marriage being here counted singly. Wherever no rates exist previous to 1870 the same is supposed as in the ensuing decade.

### MARRIAGES.

### B.—Conditions of Persons Marrying, in Ratio.

		1	Husband.			Wife.	
		Bachelor.	Widower.	Total.	Spinster.	Widow.	Total.
England		861	139	1000	902	98	1000
France.		881	119	1000	922	78	1000
Prussia		847	153	1000	902	98	1000
Russia .		808	192	1000	864	136	1000
Austria		819	181	1000	886	114	1000
Italy .		863	137	1000	924	76	1000
Spain .		851	149	1000	912	88	1000
Belgium		878	122	1000	913	87	1000
Holland		848	152	1000	898	102	1000
Denmark		865	135	1000	914	86	1000
Sweden		883	117	1000	940	60	1000
Norway		883	117	1000	941	59	1000
Greece .		899	101	1000	926	74	1000
Roumania		880	120 •	1000	912	88	1000

### C.—Classification of 1000 Marriages, and Birth-Rate.

	Bachelo	r with	Widowe	r with		Children
	Spinster.	Widow.	Spinster.	Widow.	Total.	per Marriage.
England	816	45	86	53	1000	4.16
France	840	41	82	87	1000	2-98
Prussia	794	53	108	45	1000	4.12
Russia	762	46	102	90	1000	4.85
Austria	755	64	131	50	1000	4.04
Italy	825	38	99	38	1000	4.49
Spain	811	40	101	48	1000	4.66
Belgium	827	51	86	36	1000	4-21
Holland	794	54	104	48	1000	4.34
Denmark	813	52	101	84	1000	3.55
Sweden	847	36	93	24	1000	4-01
Norway	845	38	96	21	1000	3.85
Greece	858	41	68	33	1000	
Roumania	850	80	62	58	1000	

### D.—RATIO OF SECOND MARRIAGES.

England		Per Cent. 12	Per Cent. Austria 18 Holland	Per Cent.
Ireland		9	Italy 10 Denma	rk 10
France Germany			Spain 9 Swed. & Switzerland . 13 Greece	
Russia		16	Belgium 10 Rouma	nia 11

304



### MARRIAGES.

305

E.-MARRYING AGE, 1000 MEN.

	Under 20.	20–30.	80–40.	40–50.	Over 50.	Total.	Mediun Age, Years.
England .	35	731	144	52	38	1000	27.7
Scotland .	32	684	189	62	33	1000	28.6
Ireland .	26	600	269	67	38	1000	29.9
France	23	607	262	65	43	1000	30.2
Italy	11	623	259	68	39	1000	30.2
Prussia .	8	663	231	64	34	1000	29.2
Russia .	373	428	122	56	21	1000	25-2
Norway .	8	572	291	83	46	1000	31.1
Sweden .	1	574	299	81	45	1000	31.1
Belgium .	9	548	307	91	45	1000	31.8
Holland .	23	562	281	87	47	1000	30.9
Jews	22	664	174	74	66	1000	30.1
			Women	١.		-	
England .	149	680	111	41	19	1000	25.5
Scotland .	134	68 <b>6</b>	134	37	9	1000	25.7
Ireland .	137	713	111	27	12	1000	25.2
France	204	593	145	40	18	1000	24.9
Italy	171	657	125	34	13	1000	25.4
Prussia .	111	686	152	41	10	1000	26.0
Russia	573	334	64	23	6	1000	21.5
Norway .	93	657	185	53	12	1000	27.1
Sweden .	, 51	643	232	59	15	1000	28.3
Belgium .	63	625	222	66	24	1000	28.5
Holland .	99	607	212	61	21	1000	28.0
Jews	235	585	98	54	28	1000	26.2

## F.—MARRIED AND UNMARRIED POPULATION, RATIO.

		Unmarried.	Married.	Widowed.	Total.
England		602	345	53	1000
France .		511	405	84	1000
Prussia .		606	<b>336</b>	58	1000
Wurtemburg		623	319	58	1000
Austria .		605	342	53	1000
Hungary		532	407	61	1000
Italy .		582	352	66	1000
Switzerland		609	319	72	1000
Spain .		572	360	68	1000
Portugal		628	310	62	1000
Holland		611	328	61	1000
Belgium		629	315	56	1000
Scandinavia		618	330	52	1000
Chile .		688	260	52	1000
					U

### G.—Women of Child-bearing Age (15 to 45) in 1875.

		Thousands.		ł	Ratio.	
	Married.	Unmarried.	Total.	Married.	Unmarried.	Total
England .	2,685	2,724	5,409	496	504	1000
Scotland .	840	427	767	444	556	1000
Ireland .	470	703	1,178	401	599	1000
France	4,359	8,846	8,205	531	469	1000
Germany .	4,380	5,082	9,462	468	537	1000
Switzerland	266	367	633	421	579	1000
Italy	8,224	2,977	6.201	520	480	1000
Belgium .	474	684	1,158	409	591	1000
Holland .	869	472	841	439	561	1000
Denmark .	188	228	416	450	550	1000
Sweden .	405	559	964	420	580	1000
Norway .	175	226	401	437	563	1000

#### H.—MARRIAGES IN UNITED KINGDOM.

					Marr Thou	iages, sands.	Annual Ratio per 1000 Inhabitants.			
					1861-70.	1871-80.	1861-70.	1871–80.		
England					1,770	1,960	8:43	8.17		
Scotland					224	253	7.12	7-23		
Ireland	•	•	•	•	290	251	5.14	4.74		
Unite	ed K	ingd	om		2,284	2,464	7.66	7.60		

See note to Table A, page 303.

#### I.—Consanguineous Marriages.

France London .

The nature of these marriages in France is as follows:-Cousins, 75; brother-in-law, 20; uncle and niece, 4; aunt

and nephew, 1 per cent.

In all countries about 5 per cent. of marriages prove barren, the tendency being greatest among consanguineous marriages. Among the English nobility, for example, 19 per cent. are Married women live 2 years longer than single childless. ones, although 1 in 70 dies in childbirth, since 3 births in 1000 cost the mother's life.

#### K.—DURATION OF MARRIAGE.

		,	Years.			•	Years.			3	l'ests
England			27	Russia			30	Holland			23
France.			26	Norway			24	Belgium			23
Germany			26	Sweden		•	23	Jews .			25

In England, if the mother die first, the father survives 9½ years; but if the father die first, the mother survives 11½ years. In the Census of 1871 the married people living had an average age of 41¾ years, and had been married 15 years.

### L.—Ratio of Married Persons in United Kingdom (1871).

	Eng	land.	Boot	land.	Ire	land.	U. Kingdom.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Married Unmarried . Widowed .	35·1 61·3 3·6	33·9 58·6 7·5	30·7 66·0 3·3	28·8 62·8 8·4	29·5 66·8 3·7	28·4 62·1 9·5	33·6 62·8 3·6	32.6 59.4 8.0	
Total	100.0	100-0	1000	100.0	100.0	1000	100.0	100-0	

### M .- Variations of Condition in England.

				Males,			Females.			
			1851.	1861.	1871.	1851.	1861.	1871.		
Married . Unmarried Widowed	:	•	33·7 62·6 3·7	85·0 61·3 3·7	35·1 61·3 3·6	32·9 59·8 7·3	33·9 58·8 7·3	83·9 58·6 7·5		
Total .			100.0	100.0	100-0	100.0	100.0	100.0		

#### N.-Variations in Scotland.

				Males,			Females.			
			1851.	1861.	1871.	1851.	1861.	1871.		
Married . Unmarried Widowed	:	:	29·9 66·8 3·3	30·9 65·8 8·3	30·7 66·0 3·3	27·8 63·8 8·4	28·6 63·0 8·4	28·8 62·8 8·4		
Total .			100-0	100.0	100.0	100.0	100.0	100.0		

#### O .- VARIATIONS IN IRELAND.

			Males,		Females.	
			1871.	1881.	1871.	1881.
Married .		•	29.5	27.6	28.4	27.0
Unmarried			66.8	68.5	62.1	63.4
Widowed		•	37	3.9	9.5	9.6
	Total		100-0	100.0	100.0	100.0

#### P.—Variations in France since 1806. Per 1000 Inhab.

	Per 1000	Inhab.		Per 1000	Inhab.
· v	nmarried	Married.	•	Unmarried.	Married.
1806	641	859	1851 .	. 611	389
1821	630	870	1861 .	. 600	400
1841	622	878	1876 .	. 595	405
In this table w	ridowed	l persons	are included	among uni	married.
Q.—M	ARRIAG	es in M	IONTHS AND	Seasons.	
8	Scotland.	France.	1	Scotland.	France.
January	160	126	July	. 124	89
February	70	125	August	. 78	91
March	71	55	September.	. 74	91
April	78	127	October .	. 74	98
May	49	91	November.	. 114	120
June	174	112	December .	. 139	75
½ year .	602	636	1 year	. 598	564
Quarter ending	3	England.	Scotland.	Ireland.	France.
March		246	301	432	306
June		302	801	247	330
September .		294	271	252	271
December .	•	358	827	269	293
Total		1,200	1,200	1,200	1,200
MEAT.					

### A.—Production and Consumption.

	P	roduction	, Thous	ands of Tor	18.	Consump-
	Beef.	Mutton.	Pork.	Fowl, &c.	Total.	Thousands.
United Kingdom	666	346	145	38	1,195	1,640
France	550	210	240	60	1,060	1,210
Germany	785	230	285	45	1,345	1,405
Russia	1.050	420	445	50	1,965	1.920
Austria	655	180	275	40	1,150	1,090
Italy	165	70	55	25	315	295
Spain and Port	170	180	130	10	490	460
Belgium	82	6	24	6	118	190
Holland	95	9	12	5	121	98
Denmark	80	18	16	2	116	76
Swed, and Nor	150	27	18	6	201	196
Greece	12	15	1	1	29	31
Roumania, &c	160	50	60	10	280	300
Europe	4,620	1,761	1,706	298	8,885	8,911
United States .	1,750	340	1,420	60	3,570	3,060
Canada	135	36	45	5	221	198
Total	6,505	2,137	8,171	363	12,176	12,169

The flocks and herds of the River Plate and Australia are capable of yielding a large meat crop, but at present the sheep are grown only for wool, and cattle are in some seasons slaughtered for their hides. If the available supply be taken at 67 per cent. of what the same number would give in Europe, the meat crop annually of those countries would be:—

Beef, tons.	River Plate. . 650,000	Australia. 310.000	Total. 960,000
Mutton , .	. 520,000	450,000	970,000
Pork ".	. 11,000	24,000	35,000
Total .	. 1,181,000	784,000	1,965,000

#### B.—MEAT CONSUMPTION PER INHABITANT.

	Per Annum, Lbs.							
	Beef.	Mutton.	Pork.	Fowl, &c.	Total.			
United Kingdom .	 52	24	26	8	105			
France	40	12	19	8	74			
Germany	40	12	15	2	69			
Russia	24	11	11	2 2	48			
Austria	37	10	15	2	64			
Italy	12	5	4	2	23			
Spain and Pertugal.	16	18	14	1 1	49			
Belgium	44	18	27	1 2	76			
Holland	42	5	7	2	56			
Denmark	31	19	17	2	69			
Sweden and Norway	48	9	6	2	65			
Europe	32	12	11	3	57			
United States	62	14	41	3	120			
Canada	52	17	21	3	93			

#### C.—MEAT-SUPPLY OF THE UNITED KINGDOM.

V		ual Slaug Thousand		Meat Crop,			
Years.	Cows.	Sheep.	Pigs.	Thousands Tons.	Thousands Tons.	Lbs. per Inhab.	
1835-40	1,328	8,670	1,552	778	778	66	
1841-50	1,418	10,780	1,595	880	880	72	
1851-60	1,572	12,430	1,880	990	1,034	81	
1861-70	1,790	13,672	2,043	1,106	1,237	91	
1871-80	1,948	12,968	2,062	1,160	1,448	96	
1881-82	1,994	12,466	2,080	1,195	1,640	105	

### D.—Expenditure for Meat in United Kingdom.

	Millions &	sterling.	Relative	London	Most	
Yoars.	National Earnings.	Meat Value.	Expenditure for Meat.	Price per 8 Lbs.	Expenditure per Inhab.	
	-		Per Cent.	Pence.	Shillings.	
1835-40	480	43	9	51	83	
1841-50	550	45	8	48	88	
1851-60	690	58	84	52	41	
1861-70	880	76	8	56	50	
1871-80	1.123	112	10	68	66	
1881-82	1,230	139	114	72	78	

The total meat-crop of nations, at an average of £55 per ton, represents a value of 660 millions sterling, or 36 shillings for each consumer, big and little, per annum. The average in the United Kingdom, as shown above, is more than double.

E.-MEAT IMPORTS INTO UNITED KINGDOM.

				Tons, Thousands.			Lbs. per Inhabitant.			
				1861.	1871.	1881.	1861.	1871.	1881.	
Bacon	•			26	55	231	2	4	15	
Beef				8	80	91	1	2	6	
Cattle				<b>3</b> 5	85	104	3	6	63	
Pork		•	•	7	15	19	1/2	1	11	
	T	tal		76	185	445	6	18	29	

Imported cattle are taken at 560 lbs. for beasts and 56 lbs. for sheep.

F.—MEAT EXPORTS OF UNITED STATES.

					Tons.	
Bacon				1861. 22,400	1871. 32,300	1881. 336,400
Beef .				6,400	19,800	68,100
Cattle		•		3,300	11,900	56,200
Pork .	•	•	•	8,300	18,100	49,500
	To	tal		40,400	82,100	510,200

See note at foot of preceding table.

311

8

#### , MERCURY-METALS.

#### G.—MEAT CONSUMPTION IN FRANCE.

			Per Inhabitant, Lbs.				
		1840.	1860.	1890.	1840.	1860.	1880.
Beef		299,000	450,000	640,000	19	27	40
Mutton .		82,000	114,000	210,000	5	7	12
Pork	•	290,000	878,000	805,000	19	23	19
Total	•	671,000	942,000	1,155,000	43	57	71

#### H.—Loss of Meat in Cooking.

MERCURY.		Tons, Produc-			Tons, Consump-
(I-1):f!-		tion.	Classa Dalasia		tion.
California .	•	1,380	Great Britain .	•	1,550
Spain		1,090	United States .		570
Austria		275	China		500
Other countries	•	595	Other countries		720
Total		3,340	Total		3,340

Mercury is worth about £220 per ton.

90

metal under its own title.

Copper

#### METALS. Conductors of Conductors of Heat. Electricity. Electricity. Heat. 94 . 37 Iron 100 16 Platinum 98 16 Zinc 36 29 Silver . 74 15 97 Tin 30

#### B.—TENACITY.

100

A wire, 0.84 of a line in diameter, will sustain the following weights:—

Lead				28 lbs.	Silver				187 lbs.
		•		35 ,,	Platinum				274 "
				110 "	Copper Iron .				302 "
Gold.	•	•		150 ,,	Iron .	•	•	•	549 "
			C	.—Fluid	DENSITY.				
Zinc .		•			Copper				8.22
•				000	~··				

#### METEOROLOGY.

A.—TEMPERATURE OF VARIOUS PLACES (FAHR.) \*\*

Those places marked with an asterisk show highest and lowest Quarters, instead of highest and lowest Months.

			•	ind lowest Mon			
	Highest Month.	Lowest	Year's		Highest	Lowest	Your's
Aberdeen .	60.5	37.8	49.2	*Chicago .	66.8	24.8	45-9
Adelaide .	84.4	54-2	68.4	Cincinnati .	75.6	31.6	54.7
*Alaska	53.1	31.8	42.1	Coblenz	68.4	32.7	51.5
*Albany	70.4	25.3	47.9	Colombo .	84.3	77.9	80.8
Algiers	76.5	53.0	64.3	*Colorado .	64.4	20.6	42-9
Amsterdam .	65.3	33-2	49.9	*Concord .	67.5	22.8	45.7
*Antigua .	81.7	77.4	79 4	Constant'ople	74.1	<b>39</b> -2	56.5
Archangel .	60.8	6.6	33.5	Copenhagen	64.3	29.3	46-6
*Arizona	85.5	46.9	67.4	*Costa Rica	71.7	67-9	69-3
*Arkansas .	81.6	44.2	62.1	Cracow	67 <b>·</b> 0	23.9	47.1
*Aspinwall .	79.7	78.7	79.1	Christiania.	61.3	20.8	41.5
Astrakan .	77.6	12.6	50.1	*Dakota .	74.6	7.9	43.6
Auckland .	70·0	51.0	60.0	*Delaware .	75-2	84-2	54.7
Azores	70·0	55.6	62.4	Demerara .	83.0	76·5	80 <b>·7</b>
Bagdad	94.1	44.6	73·7	*Detroit .	68.1	26·6	47.2
*Bahamas .		747	79.6	Dresden	67.5	29-2	49.1
Baltimore .	<b>75</b> ·2	30-9	54.9	Drontheim .	65·0	19.6	40.1
Barbadoes .	80.6	76.1	78.4	Dublin	61.5	<b>39</b> ·3	50.1
Barcelona .	<b>7</b> 8·8	48.7	63.0	*Dubuque .	71.7	22.6	47.7
Batavia		75.0	<b>78·3</b>	Edinburgh .	58.7	37:4	47.1
Belfast	64.2	40.0	<b>52·1</b>	Falkland I.	<b>56</b> ·0	87.4	47.2
Berlin		<b>27·7</b>	48.2	Falmouth .	<b>5</b> 8 <b>9</b>	40.5	<b>50·3</b>
Bermudas .		<b>5</b> 6·8	67.4	Faroe I	<b>55</b> ·9	86-9	45.4
Bogota		57.6	<b>59·7</b>	Florence .	<b>76</b> ·9	41.2	<b>59·2</b>
	85.9	76.3	81 3	*Florida .	83.4	54.4	71-0
Bordeaux .		41.0	57·0	Frankfort .	66.1	31.5	49-6
	72.0	26.6	48.5	*Galveston.	83.7	53.5	69.4
Boulogne	. 69.1	37.1	54.4	Geneva	718	31.1	527
	64.6	29.6	48.1	Genoa	77.4	46.7	61.1
Breslau	~- ~	27-9	46.7	Ghent	67.6	33.8	50 <b>-9</b>
Bristol		36.0	51.7	Gibraltar .	79.5	57.6	67.4
Brussels	64.4	35.3	50 7	Glasgow .	61.3	38.2	49 8
Bucharest		20.3	46.4	*Greenland	406	14.1	26.8
Buda-Pesth		25.1	47.5	*Guadeloupe		76.3	79.1
*Buenos Ayr		52.6	62.8	Guatemala.	71.3	63.8	66-6
*Buffalo .	67.7	26 6	46.9	Halifax	70.0	18.0	40.1
	72.9	51.4	62.1	Hamburg .	64-6	30·0 22·0	48·0 37·0
Cairo	85.8	56.1	72·2 82·4	Hammerfest	53·0 69·8	29.9	37°0 49°8
	90.4	69.3				71.4	77-2
Canton	83 0 76 0	52·5 57·6	69.9	Havanna .   Hobart	83·9 63·1	40-2	52.4
Cape Town Caracas	. 70.0 . 73.3	68·0	66·5 71·1	*Honduras.	83.2	76.0	80-0
Carlabad .	. 733	26.3	46·0		78·8	70.5	74-9
Chambery	. 64·7	30.3	51·5		78.8 56.2	28 3	39.4
*Charleston		51.5	65.5	Iceland	75.0	20.3	52.5
Cheltenham		38.3	51.5		76.4	28.7	53·1
Oucivennam	. 003	303	01.0	Indiana .	10.4	20 /	00 1



### METEOROLOGY.

### METEOROLOGY—continued.

		PIRO	ROLOG I	—continueu.
	Highest	Month	Year's	liighest Lowest Year's Month. Month. Average
*Iowa	75.5	22:1	Year's Average. 48.9	*Omaha 74.8 23.4 49.8
Irkutak	64.9	1.2	82 6	*Oregon 67.7 39.4 51.6
Isle of Man .	60.3	40.5	49.8	Palermo 76.4 51.3 63.1
Isle of Wight.	65-0	87.0	50.4	Paris 65.7 85.4 51.3
Jamaica	81.7	75.7	78.8	Pekin 76·3 24·7 53·3
7	62-9	41.7	51.9	Penzance 62·1 42·6 51·8
Jersey Jerusalem	77.3	47.4	62.6	Philadelphia 78-9 29-4 52-1
A	75.8	28.7	52.7	*Portland, U.S. 63.7 21.7 43.0
Kansas Kazan	64.8	8.5	35·5	*Porto Rico. 86.9 78.1 81.4
	75.6	82·4	54·1	
*Kentucky .		70.4	77.1	
Key West .	83.4			
Leipsic	62.1	29.7	46.4	*Providence 68.0 27.4 47.9
Lima	80.1	66.2	73.3	Quebec 78.4 12.7 40.0
Lisbon	72.1	51.4	61.4	Quito 63.5 58.2 60.9
Liverpool	62.0	<b>39</b> - <b>9</b>	50.8	*Raleigh 77-2 40-1 58-5
London	64.1	37.3	50.8	Richmond . 77.6 33.7 56.2
Madeira	78-9	63.1	67·6	Rio Janeiro . 82.4 67.2 77.2
Madras	88.2	<b>75</b> -2	81-9	Rome 76.0 45.0 60.5
Madrid	79·0	42.4	58.2	Rotterdam . 66.2 35.7 51.0
Malta	78·0	57.1	67.5	St. Bernard, M. 44 2 16 4 80 2
Manchester .	60·8	36.7	48.8	*St. John's . 57.5 25.1 41.2
Manilla	87.0	68.0	78.4	St. Louis 78.1 32.9 55.0
Marseilles	75-9	43.2	58.3	St. Petersburg 63.9 14.7 39.6
"Matamoras .	84.9	64.3	75.5	St. Thomas . 83.7 78.2 81.2
Mauritius	82.5	72.5	77.1	St. Domingo 86.0 77.0 81.3
Melbourne .	66.8	47.9	57.0	*San Francisco 58:1 50:1 55:2
*Memphis,Ten		42.1	60.7	Savannah . 82-2 50-5 66-7
Messina	74.7	54.2	65.7	Sebastopol . 71.2 34.3 53.0
Mexico	66.2	52.1	60.6	Sierra Leone 81.6 77.0 79.3
Milan	74.7	33.2	55.1	Singapore . 82-2 78-5 80-7
*Milwaukee .	67.0	24.0	45.8	Stockholm . 63.5 24.3 42.3
*Minnesota .	71.1	12.9	42.8	Strasburg . 65.8 31.0 49.7
3.71	79-2	53.3	64.7	Q
Mobile	79.0	52.4	66.1	C-J 00.0 EE.0 0E.0
*Montana	70.3	19.2	44.8	TO 100 200 210
			66.8	400 000 000
	80.0	56.0	59·5	
Montpellier .	78.4	42.1	44.6	Toronto 66.7 23.7 44.8 Trieste 72.6 38.3 55.3
Montreal	73.6	14.0		
Moscow	66.4	13.6	40.0	Trinidad 79.5 76.5 78.0
Munich	64.7	29 <b>·6</b>	48.4	Tunis 86.5 53.1 68.8
Nancy	63.5	33.3	49.5	Turin 73.2 80.9 53.1
Naples	76· <b>3</b>	46.2	60.3	*Utah 73.6 80.4 51.9
*Nashville .	76.3	39.7	58.3	Venice 75.1 85.3 55.4
Natal	71.8	55.2	64.7	Vera Cruz . 82.4 70.0 77.0
*Nevada	75.2	34.6	54.1	*Vermont . 67.2 21.0 43.8
*Newark, N.J.	70 4	30.8	50.5	Vienna 708 293 510
N. Brunswick	57·6	21.1	40.1	Warsaw 64 6 22 3 44 2
New Mexico	80.1	30.3	55.4	Washington . 78.5 36.1 56.2
New Orleans .	82.2	52.3	69.1	Wisconsin . 70.4 18.6 45.2
New York .	73.1	31.6	51.8	Wyoming . 72.6 20.8 45.4
Nice	73.9	44.5	58-9	York 63.5 33.4 49.2

#### B.—Temperature of Great Britain.

	G	reen wich.		
Months.	1771-1841.	1842-79.	Bise.	Scotland, 1855-64
January .	. 35.5	88.7	8-2	87-2
February .	. 38.3	89.4	1.1	87-4
March	. 40.8	41.6	0.8	89.8
April	. 45.5	47.2	17	44.1
May	. 52.4	<b>52·7</b>	0.8	49-5
June	. 578	<b>59</b> ·0	1.2	55· <b>6</b>
July	. 61.8	62-2	0.9	57· <b>6</b>
August	. 60%	61.2	0.8	57· <b>3</b>
September .	. 56-2	57·1	0.9	<b>52</b> ·8
October .	. 49.3	50.2	0.8	47-2
November .	. 41.6	43.5	1.9	40-2
December .	. 38·6	40.0	1.4	<b>88 6</b>
Annual mean	. 48.1	49.4	1.8	46.7

This rise of temperature in England has been coincident with a diminution of frost in Canada and Labrador. See Frost, Cold, Heat, Rainfall, Barometer, &c.

### C .- Extraordinary Readings, in Fahrenheit.

London,	July	15th,	1881	95-6	Bombay, July, 1883 .	96-3
Paris,	"	,,	99	<b>99</b> ·8	Adelaide, Jan. 1880 .	1146
Naples	••	25th.	••	96-2	See Appendix.	

#### MILITARY PAY.

#### A .- MIDDLE AGES, DAILY PAY.

	•	old Money, Groats.		reser alue			l Money, Broats.		due.	
Count .		40	£2	2	0	Man-at-arms	8	£0	3	0
Baron .		20	1	1	0	Cross-bowman	1	0	1	0
Knight		12	0	13	0	Archer	1	0	0	6

#### B.—PAY IN EUROPEAN ARMIES, PER ANNUM.

General Colonel . £1,000 LieutCol. 320	£660 280 220	£600 280 210	Lieut Ensign . Sergeant	. 100 . 36	£80 52 15	Italian. £90
Major . 292	180	170	Private	. 18	5	•••
Centain 919	190	120				

MILITIA.—That of the United Kingdom numbers 118,000 men. Death rate, 3:3 per 1000. In the year 1880 there were 7949 drafted into the army, 13,665 discharged or invalided, 985 expelled, and 9299 who deserted.

### MILK-MILLIONAIRES.

#### MILK.

### A .- SUPPLY AND CONSUMPTION, PER ANNUM.

	Milch	Cows.	Milk,	Million C	Walna		
•	Number, Thou- sands.	Per 100 Inhab.	Used ns Milk,	Butter,	Total.	Value, Millions	Per Inhab., Shillings
U. Kingdom	3,750	11	700	800	1,500	40	22
U. States .	12,440	24	2,300	2,500	4.800	78	29
Canada	970	22	130	270	400	7	31
Holland	540	14	50	280	330	9	44
France	4,300	12	850	600	1.450	23	12
Germany .	5,900	13	840	1,170	2,010	32	14

### B.—Components of Milk.

		Water.	Fat.	Caseine.	Sugar.	Total.
Woman		89.8	2.5	<b>3·4</b>	4.8	100.0
Cow		86-0	4.0	7.2	2.8	100-0
A88		90.9	1.1	1.9	6·1	100.0
Goat		86.8	<b>3</b> ·3	4.0	5.9	100.0
Ewe		85·6	4.2	4.2	5.7	100.0

### MILLIONAIRES, PAST AND PRESENT.

Name.		Residence.		Supposed Fortune.	Profession.
Seneca		Rome .		£3,400,000	Philosopher.
Lentulus		,, .		2,500,000	Astrologer.
Lucullus		,,		1,600,000	Gentleman.
Sir F. Goldsmid		London.		10,000,000	Banker.
John Jacob Astor		New York		6,000,000	Furrier.
Patrick Milmo .		Mexico .		2,000,000	Grazier.
A. T. Stewart .		New York		16,000,000	Haberdasher.
M. Mackay		California		18,000,000	Miner.
Thomas Brassey		London.		5,500,000	Engineer.
Baron Rothschild		,,		3,000,000	Banker.
Louis Philippe .		Paris .		2,600,000	King.
Jay Gould .		New York		20,800,000	Broker.
W. Vanderbilt.		,,		36,400,000	Railway director.
Heinrich Drasche		Vienna.		2,100,000	Potter.
Thomas Holloway		London.		2,200,000	Druggist.
Joseph Love .		Durham		2,300,000	Collier.
F. Borsig		Berlin .		3,100,000	Engine-builder.
W. Wythes .		London.		3,600,000	Contractor.
H. Krupp		Essen .		2,700,000	Ironmaster.
John Fair .		California .		3,200,000	Miner.
W. Barron .		Mexico .		1,500,000	Merchant.
J. Lambert .		Chile .		2,600,000	Miner.
John Jackson .	•	Montevideo	•	1,200,000	Shepherd.

### MINERAL SPRINGS-MINING.

#### MINERAL SPRINGS.

### A .- TEMPERATURE, FAHRENHEIT.

Bilin .		66	Thermopylæ	118	Ischia	140
St. Didier		70	Vichy	113	Ofen	144
Mallow .		72		115	Arles	145
Bristol .		74	Gastein	117	Baden-Baden .	147
Yverdun .		76	Bigorre	119	Plombières	147
Buxton		82	Toeplitz .	121	Viseu	153
Kreuznach		86	Lucca	124	Wisbaden	158
Patras .		97	Cauterets .	130	Balkan	163
Wildbad .		98	Ems	131	Acqui	167
		101	Aachen	135	Carlsbad	167
Alicante .		104		138	Chaudes Aigues	174
Pisa		106	Luchon	140	Baths of Nero .	182

### B.—RESULT OF FRENCH MINERAL WATERS.

		Barèges.	Amelie.	Vichy.	Bourbonne.	General Average.
Cured .		12	9	22	16	15
Improved		52	45	61	62	55
No effect		<b>3</b> 3	36	14	17	25
Worse .		3	10	8	5	5
Total		100	100	100	100	100

### MINING.

### A.—VALUE OF MINERALS.

			Millio	n <b>s £.</b>		No. of Miners,	Result
	Gold.	Silver.	Coal.	Sundries.	Total	Thousands Omitted.	Man
U. Kingdom .			67	12	79	538	£146
France	<b></b> .		11	8	14	206	70
Germany		1	14	4	19·	231	82
Russia	6		3	1	10	207	48
Austria	l	1	41	8	8	92	86
Italy	l	·	l	2	2	86	52
Spain				6	6	70	86
Belgium	1		6	1	61	105	62
Sweden				1	1	29	35
Europe	6	11	1054	321	1454	1,514	96
United States .	7	8	28	34	77	560	140
Span, America.	1	5	1	31	10	150	66
Australia	5	<b></b>	1	2	8	95	84
Other Countries	1	1/2	1	1	3 }	70	50
The World	20	15	136	72	244	2,389	102

316



### MINING.

### B.—DEEPEST MINES IN WORKING.

Mine.	Country.	Mineral.	Depth, Feet,
Lambert.	Belgium.	Coal.	3,490
Birkenberg.	Austria.	Silver.	<b>3,2</b> 80
Zwickau.	Saxony.	Coal	2,637
St. Andre.	Prussia.	Silver.	2,532
Rosebridge.	England.	Coal.	2,510
Dukinfield.	,,	,,	2,448
Magdala.	Australia,	Gold.	1,990
Chaumont.	France.	Coal	1,876
Kongsberg.	Norway.	Silver.	1,869
Schemnitz.	Hungary.	"	1.771
La Huerta.	Spain.	"	1,548

### C .- DEATHS OF MINERS IN GREAT BRITAIN.

Year.		Killed.	Per 10,000 Miners.	One Killed in	Tons Raised per Miner Killed.
1851-60		10,018	41	245	57,000
1861-70		10,626	83	<b>300</b>	104,000
1871-80		11,349	23	425	140,000
1881 .		1,053	19	519	170,000

#### D.—PROGRESS OF BRITISH MINING.

Year.		Tons Raised.	Value.	Tons per 100 Inhab.	Mineral Value per Inhab.
1800		10,850,000	£6,100,000	70	<b>£0 8</b> 0
1810		13,000,000	7,800,000	75	090
1820		15,700,000	10,400,000	80	0 10 0
1830		20,300,000	18,700,000	84	0 11 6
1840		34,600,000	16,200,000	130	0 12 6
1850		55,500,000	23,100,000	202	0 16 6
1860		96,000,000	32,600,000	830	126
1870		127,000,000	40,300,000	402	1 6 0
1882	Ċ	178,000,000	79,400,000	503	1 18 0

Miners' wages in England averaged 30 shillings a week in the 10 years ending 1880: they reached 51 shillings in 1873, and fell to 20 shillings in 1878.

See Coal, Copper, Iron, Lead, &c.

### E.—Cost of Production per Ton.

		81	hillings.	
		Coal	Pig Iron.	Observation.
France		10	73	The French
Prussia		5	59	Government is
England		8	50	responsible for
Belgium		8	47	this table.
Australia		7	•••	

F.—BRITISH MINING	IN 1881.	GGERM	AN MINING	n 1882.
	Value, Thousands.		Tons, Thousands.	Value, Thousands.
Coal 154,200	£65,530	Coal	. 52,100	£13,400
Ironstone . 19,800	10,900	Lignite .	. 18,000	1,800
Salt 2,100	1,300	Ironstone	. 8,200	1,900
Lead & copper 70	490	Salt	. 780	700
Tin, &c 40	500	Zinc	. 700	620
Total . 176,210	£78.720	Total	74.780	£18.430

#### MINT.

#### A .- Amount of British Money Coined.

Reign.	Gold.	Silver,	Total.	Per Annum.
Henry III		£3,898	* £3,898	
Edward I	***	38,603	38,603	£1,100
Edward II		45,751	45,751	2,300
Edward III	£11,344	85,703	+ 97,047	1,960
Richard II	3,988	2,228	6,216	300
Henry IV	396	315	711	
Henry V	19,746	6,924	26,670	3,000
Henry VI	318,444	579,225	897,669	22,000
Edward IV	10,248	47,843	± 58,091	2,700
Henry VII	8,399	116,100	124,499	5,000
Henry VIII.	675,400	642,810	1,318,210	34,500
Mary	***	6,500	6,500	
Elizabeth	795,135	4,836,802	5,631,937	125,000
James I	3,666,400	1,807,300	5,473,700	248,000
Charles I	3,319,700	8,776,545	12,096,245	502,000
Cromwell	154,512	1,000,000	1,154,512	115,000
Charles II	4,177,254	3,722,180	7,899,434	320,000
James II	2,113,639	2,115,600	4,229,239	1,410,000
William III.	3,418,060	7,094,080	10,512,140	820,000
Anne	2,485,100	618,200	3,103,300	255,000
George I	8,492,900	223,050	8,715,950	670,000
George II	11,662,200	304,860	11,966,560	360,000
George III	75,447,489	6,827,800	82,275,289	1,370,000
George IV	36,395,100	2,216,168	38,611,268	3,860,000
William IV	10,920,035	1,122,100	12,042,135	1,720,000
Victoria	189,586,200	17,839,400	§ 207,425,600 )	
,,	57,352,000	***	1 57,352,000 }	9,400,000
	1,950,000	156,300,000	158,250,000	
Total .	£412,983,689	£216,379,485	£629,363,174	£950,000

<sup>\*</sup> At Canterbury.

† At York and Calais.

‡ At Bristol.

All the rest were coined at London.

### B.—Coined since 1850.

	T	ons.	1	Millions £.				Amount per Inhab.,		
	Gold,	Silver.	Gold.	Sîlver.	Total.	Medium Population.				
U. Kingdom	1,101	1,412	153	13	166	£5	7	0		
France	2,145	4,975	299	45	344	9	11	0		
Germany	637	6,252	89	56	145	3	13	0		
Russia	822	2,272	115	20	135	1	15	0		
Austria	97	4,242	14	38	52	1	10	0		
Italy	73	2,202	10	20	30	1	4	0		
Spain	120	1,100	17	10	27	1	16	0		
Portugal	94	80	13	1	14	3	15	0		
Belgium	167	2,008	23	18	41	8	2	0		
Holland	46	3,288	6	30	36	10	3	0		
Scandinavia	35	211	5	2	7	1	1	0		
Europe	5,337	28,042	744	253	997	3	10	6		
U. States	1,528	5,081	213	46	259	3	9	0		
Australia	453		63		63	35	0	0		
India	15	21,780	2	196	198	1	0	0		
Total	7,333	54,903	1,022	495	1,517	£3	1	0		

## C.—Amounts Minted in 1881.

	Gold, &.	Silver, &.	Total, £.	Per Inhab			
Great Britain .	30,000	580,000	610,000	£0	0	4	
France	990,000	l	990,000	0	0	6	
Germany	700,000	l	700,000	0	0	4	
Russia	21,400,000	6,580,000	27,980,000	0	7	0	
Austria	260,000	5,190,000	5,450,000	0	8	0	
Italy	190,000	l ''	190,000	Ó	0	2	
Spain	870,000	5,970,000	6,340,000	0	8	0	
Belgium	400,000	600,000	1,000,000	0	8	8	
Holland	500,000	l <b>.</b>	500,000	0	2	6	
Other countries	270,000		270,000	_	•••		
Europe	25,110,000	18,920,000	44,030,000	0	3	0	
United States .	11,220,000	5,660,000	16,880,000	Ó	6	8	
India	790,000	2,390,000	8,180,000	Ō	Ō	4	
Span. America.	2,510,000	5,030,000	7,540,000	0	6	6	
Total	39,630,000	32,000,000	71,630,000	0	2	8	

In Table B, the amounts coined include much that has been re-minted, such as Napoleons converted in Germany.

MONEY.

320

The Latin Union (France, Belgium, Switzerland, Italy, and Greece), coined between 1795 and 1879 as follows:—

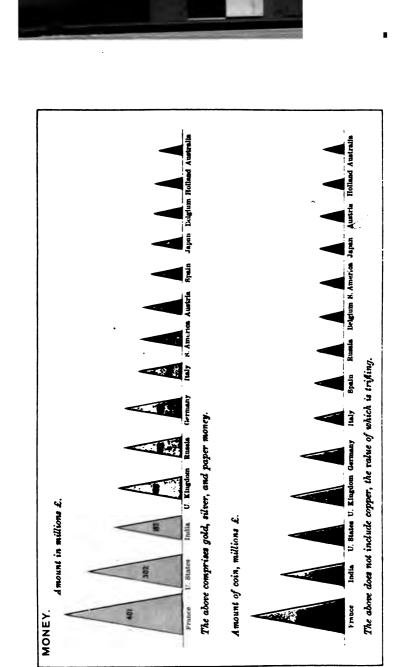
It appears, therefore, that almost all the coin has been twice minted.

#### MONEY.

#### A.—Amount in Millions £.

					Per	Inl	abitant,	
	Gold.	Silver.	Paper.	Total.	Gold.		All Mo	ney.
U. Kingdom .	124	19	42	185	£3 10	0	£5 6	_0
France	191	110	100	401	5 0	0	10 10	0
Germany	75	33	42	150	1 17	0	8 4	0
Russia	22	12	118	152	0 5	0	1 15	0
Austria	8	12	62	82	0 4	0	2 3	0
Italy	30	15	60	105	1 2	0	3 16	0
Spain	28	13	12	53	1 15	0	3 3	0
Portugal	10	4	1	15	2 7	0	3 10	0
Belgium	16	13	13	42	3 0	0	7 12	0
Holland	5	12	16	33	1 5	0	8 5	0
Denmark	2	1	4	7	1 0	0	8 10	0
Swed. & Nor.	4	1	7	12	0 17	0	2 0	0
Switzerland .	4	3	4	11	1 10	0	4 0	0
Greece, &c	3	3	4	10	0 6	0	1 0	0
Europe	522	251	485	1,258	1 13	0	. 4 0	0
United States	115	42	144	301	2 5	0	5 15	0
Canada	2	l	10	12	0 9	0	2 15	0
Span. America	13	15	65	93	0 9	0	8 0	0
India	10	170	12	192	0 1	0	1 0	0
Japan	15	10	26	51	0 10	0	1 12	0
Australia	13	1	5	19	4 10	0	6 6	0
Cape Colony .	6	1	1	8	6 0	0	8 0	0
Algeria	2	1	3	6	0 13	0	2 0	0
The World	698	491	751	1,940	1 2	0	6 0	0

The volume of paper-money is increasing more rapidly than specie: since 1848, for example, paper-money has multiplied fourfold, specie less than threefold. In 1848 paper-money was about 20 per cent. of all the currency in use: in 1880 it was 38 per cent.





.



**32**I

#### MONEY.

### B.-Money, Banking, and Commerce.

	Mill	ions & Ster	ling.	Aliquot Parts.			
	Money.	Banking Power.	Com- merce.	Money.	Banking.	Com- merce.	
United Kingdom.	185	840	570	11.8	33.6	24.4	
France	401	205	340	25.6	8.2	14.6	
Germany	150	285	330	9.5	11.4	14.1	
Russia	152	155	120	9.7	6.2	5.1	
Austria	82	166	128	5.2	6.6	5.4	
Italy	105	91	96	6.7	3.6	4.1	
Spain and Port.	68	22	58	4.8	0.9	2.8	
Belg. and Holl	75	53	210	4.8	2.1	9.0	
Scandinavia	19	35	55	1.2	1.4	2.4	
Europe	1,237	1,852	1,902	78.8	74.0	81.4	
United States	801	531	310	19.2	21.2	13.3	
Canada	12	35	85	0.8	1.4	1.5	
Australia	19	85	90	1.2	3.4	3.8	
Total	1,569	2,503	2,337	100-0	100.0	100.0	

### C.—HARD MONEY AT VARIOUS EPOCHS.

					Amount in Millions &.									
Year.				Unit	ed King	dom.	1 7	Ratio of United Kingdom,						
				Gold.	Silver.	Total.	Gold.	Silver.	Total	per Cent.				
1600				1	2	3	28	102	130	21				
1700				12	4	16	72	225	297	2½ 5½				
1800				37	8	45	120	260	880	12				
1848				55	11	66	150	280	430	15				
1880				124	19	143	700	490	1,190	12				

### D.-Uncovered Paper Money.

### Amount in Millions &.

					-
		1850.	1860.	1870.	1880.
United Kingdom.		15	16	12	10
France		3	10	8	18
Germany		2	8	22	20
Russia		31	52	91	88
Austria		18	39	58	48
ltaly				36	59
Other countries .		2	8	16	26
Europe		71	133	243	264
United States	Ċ	15	25	130	81
Spanish America, &c.		6	22	55	85
The World .		92	180	428	430
					x

MONEY-ORDERS.—The amount transmitted from the United States in 1882 was £1,288,000, of which £640,000 to the United Kingdom. The amount received in United States from Europe was £1,660,000.

MONTS-DE-PIETE.—Government pawn-offices, of which there are 42 in France, yielding a net profit of £48,000 per annum, which goes to municipal hospitals. Similar institutions exist in Spain and Italy.

		No. of Pledges.	Amount.	Average.
France		2,970,000	£2,300,000	£0 15 6
Spain .	•	235,000	985,000	4 4 0

MORTAR.—In England a proper mixture requires onethird lime. In March 1882, some houses were ordered to be pulled down at West Brighton as unsafe, the mixture having only one-sixth lime.

#### MORTGAGES.

	Millio	ns £.	Mortgage	Average	Ratio p	er Inhab
	Approx. amount of Mortgages.	Value of Houses and Land.	Ratio to Value, per Cent.	Rate of Interest, per Cent.	Mort- gage.	Real Estate
U. Kingdom .	1,600	3,920	41	41	£45	£111
France	770	4,460	17	5	20	120
Germany	1,700	3,450	49	51	38	80
Russia	450	2,240	20	7	6	30
Austria	300	2,040	15	6	8	55
Italy	535	1,440	37	9	19	50
Spain and Port.	260	1,230	21	11	13	61
Holland	55	320	18	41	14	80
Belgium	75	380	20	5	14	70
Scandinavia .	100	760	13	51	16	118
Australia	120	860	83	6	40	120
Total	5,965	20,600	29	6	£20	£70

In England, according to Lord Reay, the landed properties are mortgaged for 58 per cent. of their value; in 1866 the estimate was only 33 per cent. In France the mortgages rose from 505 millions sterling in 1840 to 771 millions in 1877. In Prussia the land mortgages in 1869 were 51 per cent. of the value of the lands, and the house property of Berlin was mortgaged for 68 per cent. The mortgages held by the Imperial Bank of Russia reach 148 millions sterling. In Austria new mortgages average £11,000,000 per annum.

In Italy the mortgages rose from 353 millions sterling in 1862 to 535 millions in 1870. In Holland the latest return of mortgages (1869) showed 251,000 estates mortgaged for 37½ millions sterling. In Spain the registry of mortgages averages 8½ millions sterling, and £172 per estate mortgaged. In New Zealand new mortgages average 9 millions sterling per annum, and £810 per estate mortgaged; releases average 3 millions sterling. In Egypt the new mortgages registered from 1878 to 1883 amounted to 6½ millions £.

### MOUNTAINS.—Height in feet over sea-level:—

Dawalagiri 26	6,862   Ararat	17,266	Lebanon .	. 9,	520
Sorata 25	5,250 Mount Blane.	15,781	Sinai	. 7.	500
Illimani 24	1,450 Bighorn	14,430	Olympus.	. 6,	500
Chimborazo . 21	l,440 Teneriffe	12,036	Puy-Dome	. 4,7	750
Hindoo Koosh 20	0,800 Egmont	11,433	Ben Nevis	. 4.5	358
Cotopaxi 19	0,600 St. Bernard .	11,006	Vesuvius.	. 3.	978
Kaa-Mowna . 18	8,400 Etna	10,963	Snowdon .	. 3,1	571
Orizaba 17	7,371 Pic Blanc	10,205	Gibraltar.	. 1,4	132

The greatest height attained by Humboldt was 19,510 feet, in the Andes, but Mr. Whymper, in 1880, ascended Cotopaxi to 19,620 feet, and Chimborazo to 20,545 feet.

#### MUNIFICENCE.

Donor.		Amount.	Locality.	Object.
Peabody		£500,000	London	Lodging-houses,
Baird		500,000	Aberdeen .	Church endowment.
Jeejeebhoy		500,000	Bombay .	Hospital, schools.
Mason		430,000	Birmingham .	Orphanages.
Holloway		350,000	Loudon	Hospital and school.
Gardner		300,000	,,	Blind asylum.
Guy .		240,000	,,	Hospital.
Ross .		200,000	Glasgow .	Hospitals.
Lick .		200,000	California .	Observatory.
Cooper		160,000	New York .	Schools.
Guinness		150,000	Dublin	Church,
Stewart		150,000	New York .	Hospitals,
Rowe .		120,000	Dublin	Church,
Aston.		100,000	New York .	Library.
Galignani		100,000	Paris	Asylum for aged.
Day .		100,000	London	Blind asylum.
Firth .		100,000	Sheffield .	Schools and asylum.
Salt .		100,000	Yorkshire .	Hospital, &c.
Rossini		100,000	Paris	Aged musicians,
Crossley		100,000	Halifax (Eng.)	Orphanage.

### MURDER— NAMES.

### MURDER.

324

		· <b>A</b> .		
		Annual Murders,	Annual Deaths.	Murders per 10,000 Deaths.
England		877	531,000	7:1
Ireland .	•	91	108,000	8.8
France .		662	885,000	8-0
Germany		995	1,148,000	6.4
Russia .		2,000	2,474,000	8.0
Austria .		600	680,000	8 <b>-8</b>
Italy .		2,470	840,000	29.4
Spain .		1,200	505,000	23-8
Scandinavia		110	150,000	7.4
Switzerland		88	64,000	13.8
United States		2,057	980,000	21.5
Australia		63	87,000	17.0

Some countries include infanticide and manslaughter, others do not, for which reason a true comparison is impossible.

### B.—Homicide in England.

				N	umber of Victi	ms,
Wilful murder				Male. 43	Female.	Total 97
Manslaughter				115	58	173
Infanticide	•	•	•	48	56	104
Total				206	168	874

### MUSEUMS.—United Kingdom, 1881.

	Visitors, Thousands Omitted,		Visitors, Thousands Omitted.
British Museum	. 790	National Gallery	. 958
South Kensington	. 1,017	Kew Gardens .	. 612
Bethnal Green .	. 451	Edinburgh .	. 350
Patent Office .	. 266	Dublin	192

### N

### NAMES.—The ratio in England per 1000 shows:-

Mary .		68	George		36	Henry			21
William		66	Sarah		36	Alice			19
John .		62	Anne		83	Joseph			18
Eliza .		61	James		31	Jane .			17
Thomas		89	Charles		23	Ellen.		_	16

### NATURAL HISTORY.—According to Prof. Phillips—

Terrestrial					Animals. 115,500	Plants. 59,000
Fresh-water Marine	•	•	•	•	3,560 11.750	100 1.000
•	otal		•	•	130,810	60,100

The above classification was made in 1836.

### NAVIES.

### A.—Strength in 1882.

	Ships.	Men.	Guns.	Cost, Thousands.	Annual Cost, Pence per Inhab.
U. Kingdom .	210	58,000	1,481	£10,700	72
France	856	43,000	2,834	6,800	44
Germany	81	16,000	570	2,000	<b>1</b> 1
Russia	389	26,000	836	8,000	9
Austria	65	10,000	320	900	6
Italy	67	15,000	480	1,800	16
Spain	121	14,000	525	1,300	19
Portugal	41	3,000	178	300	16
Holland	120	8,000	560	1,000	60
Denmark	58	1,000	245	300	36
Sweden and Nor.	264	9,000	672	500	19
Europe	1,772	203,000	8,701	28,600	24
U. States	138	8,000	1,055	8,100	14
Brazil	41	4,000	166	1,200	82
Japan	27	6,000	149	600	5
Argent. Republic	27	2,000	88	200	24
Chili	23	3,000	55	200	21
					_
The World .	2,028	226,000	10,214	£33,900	22

### B.—NAVIES OF 1840.

		114	Ships.	Guns.	Ratio of Fighting Power.
Great Britain .			392	16,310	40
France			146	7,620	19
Russia			83	5,460	14
United States .			60	3,250	8
Turkey			33	2,440	6
Holland			30	1,640	4
Spain			26	610	11
Other countries	•	•	57	2,779	71
The W	orld		827	40,109	100

### C.—Iron-clad Fleets in 1882.

	Vessels,	Tons.	Average Tons.	Plating, Inches. Max.	Guns,	Tonnage of Guns.	Do. per Vessel
Great Britain	51	375,000	7,400	24	470	7.030	138
France	59	309,000	5,200	21	464	5,695	101
Germany	24	97,000	4,040	10	146	2,055	86
Russia	29	92,000	3,170	18	162	2,424	84
Austria	14	58,000	4,160	13	132	1,420	101
Italy	18	81,000	4,450	36	133	2,195	122
Spain	10	33,000	3,300	6	195	810	81
Turkey	15	61,000	4,070	12	134	1,335	89
Holland	19	34,000	1,800	8	57	622	33
Denmark	7	23,000	3,300	10	63	511	73
Swed, and Nor.	18	10,000	550		26	104	6
Portugal	3	4,000	1,300	10	31	86	29
Europe	267	1,177,000	4,400	36	2,013	24,557	92
United States	24	24,000	990	***	74		
Brazil	9	11,000	1,200	200	45		
Argentine	3	5,000	1,700		15	***	
Chilian	3	4,000	1,300	9	22	225	75
Japan	4	11,000	2,800	9	19	244	61
The World	310	1,232,000	3,970	36	2,188	25,026	81

The progress of "iron-clad science" in 30 years has been: 1854. Gunboats built for Crimean war, 4-inch plates, perfectly shot-proof.

1862. Merrimacs and Monitors used in American war.

1873. English rifle cannon send 200 lb. shots, 9-ton guns, through 8-inch plates.

1874. Plates of 10 inches pierced in like manner.

1876. Armstrong 100 ton guns broke 22-inch Creusot steel plates.

1879. Shot from 9-inch gun, 75 lbs. powder, unable to pierce a 12-inch plate of iron and steel alternate layers.

1880. Result of Krupp's experiments :-

Gun.		Inch.	Shot, Lbs.	Penetra- tion.	Foot Tons.
Krupp		91	348	18.1	8,630
British		113	812	17-9	12,260

Krupp's shot penetrated 18-inch plates, the British did not. 1882. Italian ironclad, "Lepanto," has plates 36 inches thick.



#### NAVIES.

### D.—PRINCIPAL IRONCLADS AFLOAT.

Name,	Flag.	Tonnage.	Horse- power,	Maximum Plates, Inches.	Tons of Guns.
Lepanto	Italian .	14,600	18,000	36	480
Duilio		10,650	7,500	22	400
Inflexible	British .	11,170	8,000	24	324
Colossus		9,160	6,000	18	172
Baudin	French .	11,440	7,000	21	300
Redoubtable .		8,700	6,000	9	172
Kon, Wilhelm .	German .	9,400	8,000	9	300
Mésoudiyé	Turkish	9,100	5,500	12	235
Peter the Great	Russian .	9,500	2,200	14	140
Tegethoff	Austrian	7,400	8,000	13	150
Vittoria	Spanish .	7,100	5,000	6	160
Nederland	Dutch	3,500	2,200	8	140
Heligoland	Danish	5,500	3,700	10	98
Foo-so	Japan .	3,700	3,500	9	75
Cochrane	Chili	2,200	2,500	9	75
Brown	Argentine	1,700	1,500	9	75

The average cost of building ironclads has been, per ton, British £48, French £55, Italian £57, German £60. Including guns and equipment, an ordinary ironclad now costs £80 per ton. The new Italian vessel, "Lepanto," is the greatest war-vessel ever built, and cost £1,100,000, fully equipped: she was 6 years building, and is 402 feet keel.

### E. -BRITISH AND FRENCH IRONCLADS COMPARED.

	Ves	sels.	Guns	Tons.	ons. Guns, Ton		
Class,	British.	British. French. British. French.		British.	French.		
1st 2nd	9 27	11 17	1,826 4,097	2,084 2,490	203 151	190 146	
3rd	15	31	1,107	1,391	74	45	
Total .	51	59	7,030	5,965	138	101	

### F.—British Dockyards (1866-80).

			Tons	Built, Thou	sands.	Cost	Cost, Thousands &.			
Built by			Iron.	Wooden.	Total.	Iron.	Total.			
Government Contractors.	•	:	123 55	85 41	208 96	5,466 2,709	3,964 2,321	9,430 5,030		
Total			178	126	304	8,175	6,285	14,460		

### 328 NAVIES-NEGROES IN UNITED STATES.

The cost of construction per ton of displacement was less in Government, but per ton of hull less in contractors' yards, viz.:—

			Doc	kya	rd.	Cont	ract	m.
Per ton	displaceme	nt	£45	7	0	£52	8	0
**	of hull		43	8	0	41	12	0

The cost of French ironclads built in State dockyards has been 30 per cent. more than those built by contractors.

### G.—RISE OF BRITISH NAVY.

	Ye	ar.		Vessels.	Tons.	Guns.	Mon.	Cost per An
1603	•	-	_	42	17,000			£180,000
1685				179	104,000	6,930	10,000	390,000
1760				325	821,000	10,600	51,000	5,611,000
1803				450	461,000	24,800	180,000	12,037,000
1850				585	570,000	17,200	48,000	6,438,000
1882				210	680,000	1,480	58,000	10,700,000

### H .- Age of Men in British Navy.

Under 25					er cent.
25 to 35				33	
35 to 45				12	**
Over 45		•		2	,,
Tota	al	•		100	

The death-rate during the past 10 years averaged 10.4 pcr 1000, against 19.6 in the British mercantile marine.

### I.—British Navy Expenditure (1882).

Seamen .				Number. 58,100	Cost. £3,718,000
Workmen				16,000	1,446,000
Pensions				•	2,063,000
Stores .				•• ·	2,406,000
Sundries.	•			•••	1,093,000
		Total	١.		£10,726,000

### NEGROES IN UNITED STATES.

Year.		Number, Thousands.	Ratio to   Pop., per Cent.	Year.		Number, Thousands,	Ratio to Pop., per Cent.
1800		1,002	19	1860		4.442	14
1820		1,772	19	1870		4,880	18
1840		2,874	17	1880		6,581	13



### NERVOUS SYSTEM—OATS.

329

### NERVOUS SYSTEM.

Water .			Infants. 82.8	Youths. 74·3	Adults. 72.5	Aged Persons. 73-9	Idiots. 70:9
Albumen			7-0	10.2	9.4	8.6	8.4
Fat .			8.2	5.3	6.1	4.3	5.0
Salts, &c.			5.9	8.6	10.2	12.2	14.5
Phosphorus	•	•	0.8	1.6	1.8	1.0	0.8
Total			100.0	100.0	100.0	100.0	100.0

NEWS.—In 1811 the news published in the Paris papers had taken the following number of days to reach Paris:—

From			ľ	ays.	From			1	Эвуз.	From			:	Days,
From Strasburg Lyons .	•	•		6	Brest .			•	6	Rome .		•		11
Lyons .	•	•	•	6	Antwerp	•	•	•	7	Madrid	•		•	21

The average speed was 70 miles a day. For newspapers see *Press*.

### NICOTINE.—Orfila found in

Havannah	tobacco			2 per cent.
French	"			6 "
Virginia	32			7 ,,

The proportion in Brazilian is still higher.

NITRE.—Atacama (Chile) exports 350,000 tons perannum. The nitre is about 2 feet below the surface; one bed covers 5000 acres, 4 feet in thickness, say 25 million tons, worth 300 millions sterling.

0
_

OAK. See pa	ge	447.				
OATS.	_			Acres, Thousands.	Bushels, Millions.	Bushels per Acre.
United Kingdon	m			4,180	130	81
France .				9,010	220	24
Germany .				9,120	180	20
Russia .				<b>32,800</b>	520	16
Austria .				7,200	130	18
Italy and Spain				2,000	32	16
Belgium and H		ind.		900	85	38
Scandinavia		•		2,500	76	80
_						_
Europe .		•	•	67,710	1,323	20
United States				15,200	403	26
Canada .	•	•		2,000	55	28
Total				84,910	1,781	21

The oat-crop of the world is worth 205 millions sterling. See Grain.

### OBESITY. See Corpulence.

#### OBELISKS.

Name.			Locality.		Height, Ft.	Weight, Tons.
Wellington	n		Dublin		205	1,000
Monumen	t		London		202	1,800
Nelson .			,,	•	177	1,500
,, •			Dublin		125	1,000
*Lateran .			Rome .		105	445
Alexander	•		St. Petersl	burg	84	200
*Vatican .		•	Rome .		83	220
*Luxor .			Paris .		76	240
*Cleopatra			London		68	140
*Meidan .			Constantin	ople	50	60
*Quirinal .			Rome .	•	48	60

In the foregoing table those marked with an asterisk are Egyptian monoliths, or real obelisks, of extreme antiquity. There is also a very fine obelisk at Heliopolis, still standing. The second of Cleopatra's Needles has been removed to the United States, for erection in New York.

### OBSERVATORIES.

A.—N	UM	BER.			B.—Telesco	PES.
United Kingdon France	1	•	•	14	•	Inches
Germany .	•	•	•	6 29	Lord Rosse	Aperture.
Russia .	:	:	•	12	Lassell	. 48
Italy				9	Herschell	. 48
Austria .				8	Polkova	. 30
Switzerland				4	San José, California	. 28
Other countries				12	Vienna	. 27
				_ '	Washington	. 26
Europe .				94	Newcastle	. 25
United States				19	Pultowa	. 16
Canada .				1	Cambridge, U.S	. 15
Spanish America	3.			7	Paris	. 13
Asia				2	Greenwich	. 12
Africa .				2	Cincinnati	. 12
Australia .				3	Munich	. 11
				i	Rome	. 10
The World				128	Berlin	. 10

Leyden Observatory was founded 1632, Copenhagen 1637, Greenwich 1675, Paris 1677.

Lord Rosse's telescope brings the moon apparently within 50 miles of our view.



### **OCCUPATIONS**

### OCCUPATIONS.

### A .- Workers in all Nations.

	1	housands			Ratio.		
	Agricul- ture.	Manu- facture.	Various.	Agri- culture.	Manu- facture.	Various.	Total
England	1,657	5,138	7,968	11.3	34.7	54.0	100
Scotland	270	749	1,171	12.3	34.0	53.7	100
Ireland	1,062	354	2,150	29-9	9.9	60-2	100
U.Kingdom	2,989	6,241	11,289	14.6	30.4	55.0	100
France	14,162	6,615	6,988	51	24	25	100
Germany .	12,920	10,140	7,014	43	34	23	100
Russia	40,590	2,436	6,494	81	5	14	100
Austria	13,755	3,266	7,987	.55	13	32	100
Italy	12,862	1,274	4,174	70	7	23	100
Spain	3,360	1,344	6,416	30	12	58	100
Portugal	1,251	220	1,306	45	8	47	100
Belgium	1,512	1,436	828	40	38	22	100
Holland	1,563	321	806	58	12	30	100
Scandinavia	3,540	520	1,750	61	9	30	100
Europe .	108,504	33,813	55,052	55	17	28	100
U. States .	7,713	8,526	18,876	26	12	62	100
Total	116,217	37,839	73,928	51	17	32	100

### B.—Occupations in United Kingdom.

	1	Thousands	Ratio.			
	1851.	1861.	1871.	1851.	1861.	1871.
Professional	387	599	794	2.2	3.1	3.9
Commercial	759	822	1,038	4.3	4.3	5.1
Agricultural .	3,922	3,436	2,989	21.8	18.1	14.6
Manufacturing .	4,254	5,842	6,241	23.8	30.7	30.4
Various	8,539	8,299	9,457	47.9	43.8	46.0
Total .	17,861	18,998	20,519	100.0	100-0	100.0
Children	9,651	10,066	11,139			
Population .	27,512	29,064	31,658	<b> </b>		

For Census of 1881, see page 335.

### C.—Occupations in England.



		Thousands.		Percentage.			
Year.	Agri- culture.	Trade and Manufac.	Various.	Agri- culture.	Trade and Manufac.	Various.	
1811	896	1,129	519	35	44	21	
1821	979	1,350	612	33	46	21	
1831	961	1,435	1,018	28	42	30	
1841	1,499	8,111	2,180	22	46	82	
1851	2,029	8,692	5.927	17	81	52	
1861	2,011	4,829	6,234	15	87	48	
1871	1,657	5,953	7,153	11	40	49	

### D.—OCCUPATIONS IN ENGLAND, UNDER SEXES.

Class.			Male	s, Thou	sands.	Females, Thousands.			
Ciass.			1851.	1861.	1871.	1851.	1861.	1871.	
Professional			201	385	486	71	97	198	
Commercial			470	585	758	51	38	57	
Agricultural			1,571	1,632	1,470	458	379	187	
Manufacturing			2,476	3,263	3,616	695	1,566	1,522	
Various .			989	505	858	4,666	4,626	5,611	
Children .		•	3,073	3,431	3,871	3,199	3,612	4,078	
Total			8,780	9,801	11,059	9,140	10,318	11,653	

### E.—Occupations in England, according to Age.

			Thousands.								
Class.				Under 20	).	Over 20.					
			1851.	1861.	1871.	1851.	1861.	1871.			
Professional			22	63	204	250	419	480			
Commercial			115	121	164	406	502	651			
Agricultural			439	405	356	1,590	1,606	1,301			
Manufacturing			775	1,083	1,147	2,396	3,746	3,991			
Various .		•	1,244	1,077	1,455	4,411	4,052	5,014			
Total			2,595	2,749	3,326	9,053	10,325	11,437			

333

### OCCUPATIONS.

### F .- RATIO IN ENGLAND, UNDER SEXES.

Class.				1851.		1871.			
Ciass.		Male.	Female.	Total.	Male.	Female.	Total.		
Professional	•		1.8	0.6	2.4	8.8	1.8	4.6	
Commercial			4.0	0.4	4.4	5.2	0.4	5.6	
Agricultural			18.5	4.0	17.5	10.0	1.8	11.8	
Manufacturing			21.3	6.0	27.3	24.4	10.3	84.7	
Various .	•		8.2	89.9	48.4	5.8	88.0	48.8	
Total			49.1	50.9	100.0	48.7	51.8	100.0	

### G.—RATIO OF ENGLISH OCCUPATIONS (AGE).

		1851.		1871.			
	Under 20.	Over 20.	Total.	Under 20.	Over 20.	Total.	
Professional .	0.2	2.2	2.4	1.3	8.2	4.5	
Commercial .	10	3.5	4.5	1.1	4.2	5.8	
Agricultural .	8.8	14.0	17.8	2.4	8.5	10.9	
Manufacturing	6.6	20.6	27.2	7.7	27.5	85.2	
Various	107	87.4	48.1	9-9	34.2	44.1	
Total	22:3	77-7	100.0	22:4	77.6	100.0	

### H -OCCUPATIONS IN SCOTLAND.

		Thousands	Percentage.			
	1851.	1861.	1871.	1851.	1861.	1871.
Professional.	33	52	54	17	2.6	2:5
Commercial	74	83	115	4.0	4.2	5-2
Agricultural ,	861	372	270	19.8	18.6	12.3
Manufacturing .	543	682	749	28.8	84.1	84.0
Various	860	806	1,002	457	40.5	46-0
Total	1,871	1,995	2,190	100.0	130-0	100-0
Children	1,018	1,070	1,176			
Population .	2,889	3,065	3,366			

### I.—Occupations in Ireland.

	Adult Po	pulation, Ti	Ratio.				
Year.	Agricul- tural.	Various.	Total.	Agricul- tural,	Various.	Tot 1	
1841 .	1,904	3,015	4,917	89	61	100	
1851 .	1,532	2,660	4,192	87	63	100	
1861 .	1,053	2,794	8,847	27	78	100	
1871 .	1,062	2,504	8,566	80	70	100	
1881 .	998	2,372	8,870	30	70	100	

### K .- Trades and Professions in England.

	Tì	ousan	ds.		Thousands.		
	1841.	1851	1871.		1841.	1851.	187L
Actors	1	2	7	Gunsmiths	5	7	12
Architects	1	3	6	Hairdressers	9	11	13
Artists	3	7	17	Hatters	17	16	22
Bakers	36	52	59	Iron operatives .	117	265	360
Bookbinders	5	10	16	Law	18	27	37
Booksellers	5	7	8	Linen operatives	16	27	27
Brewers	9	17	26	Medicine	17	29	44
Bricklayers	39	67	100	Merchants	11	8	16
Brickmakers	17	28	39	Millers	22	83	30
Builders	8	12	23	Miners	168	261	376
Butchers	45	63	76	Municipal official	s 12	27	51
Carriers	195	346	528	Papermakers .	5	11	17
Carpenters	137	156	206	Plumbers	38	56	103
Civil Service	20	36	54	Potters	24	35	45
Clergy	15	28	39	Printers	15	22	45
Clerks	49	60	119	Railway officials	3	25	85
Coachmakers	12	17	23	Saddlers	14	15	23
Coopers	14	16	19	Sawyers	25	31	28
Cotton operatives	215	458	533	Servants	977	908 1	,503
Dressmakers	92	234	299	Shipbuilders	17	20	41
Druggists	10	15	19 '	Shoemakers	188	240	223
Engineers, Civil .	2	3	5	Silk operatives .	54	117	77
Engine drivers .		7	31	Tailors	108	132	150
Fishermen	10	17	21	Teachers	47	67	127
Gamekeepers	6	8	12	Upholsterers	26	34	57
Gardeners	45	72	98	Waggoners	26	44	74
Gaswork operat	1	6	14	Watchmakers .	13	17	22
Glassmakers	7	12	20	Wheelwrights .	25	28	30
Greengrocers	8	14	26	Wine-merchants	2	7	10
Grocers	41	71	111	Woollen operat.	109	242	252

### OCCUPATIONS-OCTROI.

**335** 

## L.—Occupations and Earnings, United Kingdom, 1883 (Levi).

		•	•			
	Omitted). Earnings,			No. (00"s Omitted).	Earnings, Millions &	e per Head
Army 1	182 7.0	39	Forward .	. 8,080	331·1	41
Agric.labourers 1,8	882 67.1	36	Mills, cotton	. 619	28.6	45
Bakers	92 4.4	48	,, linen	. 138	4.4	32
Bootmakers . 2	254 12.6	50	, silk .	. 61	20	33
	36 41 6	55	,, woollen		9.2	35
Cabinetmakers	79 4.6	58		. 56	8.0	54
	99 93		Papermakers	. 66	2.5	36
Costermongers	77 2.9		Police	. 53	3.6	68
Coachmakers .	97 4.2		Pottery	. 65	3.3	50
Domestics . 1,9		37		. 80	4.9	61
Dyers	88 2.8	32	Quarries	. 64	3.5	55
Hatters	54 1.9	35	Railways	. 205	10.6	<b>52</b>
Hosiery	64 2.4	37		. 116	6.4	55
			Sawyers			56
	35 32.1	60	Seamen	. 376	21.2	
	29 28.6	30	Shipwrights	. 62	2.5	40
	92 12.5	65	Shirtmakers	. 151	3.1	20
	64 40	25	Tailors	. 655	23.8	36
Miners 5	05 24.6	49	Various	1,158	57.5	50
8,0	80 331.1	41	Total .	12,265	521.2	42

The above includes not only wages, but also board and lodging; tailors include milliners. See Occupations in Appendix.

### M.—Occupations in Germany (1881).

Class.			Prussia.	Germany
Agricultural			42.7	41.5
Manufactures			33.2	81.1
Commerce .			8.2	6-2
Sundry .			15-9	21.2
-				
Total			100-0	100 0

### OCEANS. See Seas.

### OCTROL

### A .- AGGREGATE FOR ALL TOWNS IN FRANCE.

Year.		Amount	Population Taxed.	Per Inhab. Shillings,
1823		£2,470,000	5,998,000	8
1833		2,640,000	6,306,000	8
1843		3,302,000	7,297,000	9
1853		3,617,000	7,330,000	10
1863		6.298.000	9,582,000	13
1873		8,451,000	10,517,000	16
1880		11.040.000	11.255.000	20

В	—С	OMP	ONE	NT8	OF OCTROI IN	1877.
Levied or	1				Amount.	Per Inhab. Pence.
Wine					£3,073,000	68
Spirits					720,000	16
Meat, br	ead,	&c.			3,531,000	78
Fuel, for	age				1,504,000	33
Sundries	_	•	•	•	1,177,000	25
		To	tal	•	£10,005,000	220

### C.—Octroi of Paris.

Year.			Amount.	Population.	Per Head, Stillings,
1801 .		•.	£441,000	553,000	16
1821 .			1,040,000	724,000	29
1845 .			1,870,000	986,000	28
1867 .			4,030,000	1,732,000	46
1880 .	•		5,640,000	2,180,000	52

### D.—INCREASE SINCE 1867.

			Amo	Shillings per Inhab.		
		1867.	1880. 1867.		1880.	
Paris .			£4,030,000	5,640,000	46	52
Marseilles			307,000	490,000	21	28
Lyons .			244,000	480,000	16	25
Rouen .			102,000	155,000	21	29
Bordeaux			112,000	l <b>.</b>	12	l
Nice .				75,000		28

### OIL.

# A.—Pounds of Oil from 100 lbs. of

. 48

. 58

### B.—Production of Olive Oil.

	Acres (Ti-ousands Omi:ted).	Tons Olives.	Oil, Million Gallons,	Gallons per Acre.	Value of Crop (Thousands Omitted).
Italy	2,224	110,000	31	14	£5,800
Spain and Portugal	1,500	90,000	25	16	3,800
France	320	22,000	6	18	1,200
Greece	400	18,000	5	12	700
Total .	4,444	240,000	67	15	£11,500



#### OIL-OPERATIVES.

### **3**37

### C .- Petroleum in United States.

Year.		Annual A Millions of	verage, Gallons.	Value Produced	Per Gallen, Pence.	
		Production.	Bxport.	(Thousands Omitted).		
1859-63.		•	60	6	£5,700	22
1864-68.	•		180	48	9,300	17
1869-78.			320	133	11,600	9
1874-80.			680	840	13,700	5
1881 .			960	460	15,600	4

There are 15,500 wells within an area of 40 square miles (Pennsylvania), but only 6000 are working. Depth varies from 400 to 1200 feet. Each bore costs £1000, and only 1 in 5 strikes oil.

### D.-MARINE OILS.

Whales	_		Annual Slaughter. 1.500	Gallons Oil. 3,300,000	Gallons per Carcass. 2.200
Seals .		·	550,000	2,600,000	5
Penguins		•	1,800,000	130,000	1-10th.

About 300 gallons of oil will suffice in 20 minutes to smooth the roughest sea (Admiralty experiments, Aberdeen, December 3, 1882).

**OPAL.**—The Emperor of Austria has one weighing 17 ounces, and for which he refused an offer of £50,000.

### OPERATIVES.

### A.—Numbers Employed (Thousands).

	In Fac	ctories.	]		Total.	Ratio to
	Textile.	Various.	Mining.	Handi- craft.		Popula- tion, Per Cent.
U. Kingdom .	1,060	720	550	3,911	6,241	18
France	620	430	206	5,359	6,615	18
Germany	632	480	231	8,797	10,140	22
Russia	354	286	207	1,589	2,436	3
Austria	360	490	92	2,324	3,266	9
Italy	130	240	36	868	1,274	5
Spain	90	110	71	1,073	1,344	8
Belgium	280	130	105	921	1,436	26
United States.	545	1,584	660	787	3,526	7
Total	4,071	4,420	2,158	25,629	36,278	101

### B.—Textile Operatives in United Kingdom.

				Th	_ Ratio to		
Year.		•	Men.	Women	. Children	. Total.	Population, per Cent.
1835			82	167	104	853	1.4
1850			158	329	109	596	2-2
1880	•	•	232	543	201	976	2.8
Cotton			115	259	108	482	<del></del>
Wool			72	118	48	238	•••
Flax, &	c.		87	138	85	210	•••
Silk		•	8	28	10	46	•••
Total	in :	1880	232	548	201	976	•••
1885	_			rland. 195	Scotland, 40	Ireland. 18	U. Kingdom. 353

1835		England. 295	Scotland, 40	Ireland. 18	U. Kingdom. 358
1850		501	67	28	596
1860		648	95	38	776
1870		718	127	62	907
1880		774	188	64	976

See Manufactures, Occupations, Wages.

### OPIUM.—Annual shipments from India:—

Years.		Chests.	Tons.	Value.	Per Ton.
1861-65		73,100	4,305	£10,810,000	£2,510
1866-70		82,80 <b>0</b>	<b>4,</b> 870	11,240,000	2,290
1871–75		89,200	5,250	11,790,000	2,250
1876-80		102,100	6,005	12,640,000	2,106

The Chinese impose a duty of £5 per ton. It is retailed at 2 shillings per ounce, or double the price of native opium. The province of Hankow produces 5300 tons per annum. There are in China 3 million opium-smokers.

ORANGES.—Italy has 5,400,000 trees, which give 1600 million oranges yearly, say 300 per tree. The average in Seville is said to be 600 per tree. The island of St. Michael's, Azores, with an area of only 210,000 acres (about equal to the Isle of Man), sends 250 million oranges yearly to England, worth £300,000.

<b>A.</b> —	A.—Exporting Countries.  Millions.						.—	IPORTAT		ito
			1862	1870.	1880.			Millions.	Per Inhah	Price, Bushel
Spain			150	230	960	1854		244	9	9/
Italy			460	780	930	1861		390	13	117
Greece			23	47	30	1871		712	23	8/
Azores			300	300	300	1881		1.152	33	7/6

There is no return of the quantities shipped from the Azores in 1862 or 1870. Each inhabitant of the United Kingdom spends 1 shilling per annum on oranges, or, allowing for retail, almost 2 shillings.

ORCHARDS.—The orchards of the United Kingdom cover an area of 180,000 acres, and produce 85,000 tons of apples; those of France, 560,000 acres, from which are obtained 220 million gallons cider yearly.

**ORPHANS.**—In 1882 there were 61,000 in the French asylums. See *Charities*.

**OSTRICHES.**—The production of ostrich feathers is as follows:—

llows:		Lbs. Feathers.	Value.	Average per Lb.
Cape Colony		260,000	£1,040,000	£4
Tripoli		20,000	200,000	10
Egypt .		4,000	40,000	10
Morocco .		2,000	20,000	10
Buenos Ayres	•	160,000	82,000	4s.

About 35,000 birds are plucked annually at the Cape, averaging 3 lbs. per bird. In Buenos Ayres they are slaughtered, and the race is dying out.

#### OYSTERS.

Per Annum.

	Production,		Consumption,	Per Inhab.
U. Kingdom .	. 800	London .	. 220	60
France		Paris	. 57	26
United States	. 11,200	New York	. 810	660
Portugal	. 600	France .	. 260	7
	10.100			

Total . . 12,480

Baltimore packs 7 million bushels per annum. An oyster 3 months old is the size of a shilling, 6 months half-a-crown, but is not fit to eat before 4 years old. The oyster beds established by advice of Abbé Bonnetard in France produced 97 million oysters in 1881.

OZOKERIT.—Ozokerit is a mineral oil from layers of wax found at Borislav, Galitzia. The mines are about 250 feet deep, employing 9000 men, who raise 30,000 tons, worth £480,000 per annum.

**OZONE.**—The Scottish Meteorological Society report as follows:—

November . . . 53 | May . . . 62
Annual average . . . . 60

340

### PALMS-PAPER.

### P

**PALMS.**—There are 13 million date-palms in India, which produce annually 4 lbs. sugar each. The number of date-palms in Egypt in 1880 was  $4\frac{1}{2}$  millions.

### PAPER.

### A.—Production and Consumption.

	Millio	ons Lbs.	Consumption.		
	Production.	Consumption.	Lbs per inhab.		
U. Kingdom	470	430	12.1		
France	380	830	8.4		
Germany	450	410	9·1		
Russia	80	90	1.2		
Austria	160	120	3.3		
Italy	105	110	3∙9		
Spain	20	82	2.0		
Portugal	10	10	2 <b>-2</b>		
Belgium	70	40	7.2		
Holland	16	16	4.0		
Scandinavia	38	30	3·5		
Switzerland	20	18	6.8		
Turkey and Greece.	_	12	1-2		
Europe	1,819	1.648	5.1		
United States	530	540	10-2		
Canada	14	18	4.1		
Spanish America .	2	44	1.3		
Australia	-	17	6·1		
Other countries .	•••		0.1		
Other countries .	•••	98	•••		
The World .	2,365	2,365			

### B.—Components in Production.

Material.		Tons Used.	Tons, Paper.	Ratio of Paper to Material, per Cent.	
Woollen rags .		670,000	890,000	59	
Cotton " .		450,000	280,000	62	
Linen, &c., ,, .		100,000	50,000	50	
Jute and Sparta		300,000	50,000	17	
Wood and straw		400,000	40,000	10	
Sundries	•	2,200,000	220,000	10	
Total .		4,120,000	1,030,000	25	

# PAPER.

In 1881 there were 3,960 paper-mills, employing 90,000 men and 180,000 women: there were 2,780 mills worked by steam-power. The capital employed in the industry exceeded 62 millions sterling. (There were in the United Kingdom 354 mills with 16,000 operatives, producing 210,000 tons of paper, or 13 tons per operative, per annum.) The paper industry of the world sums up thus:—

Rag, jute,	æc.					£14,000,000
Chemicals						8,500,000
Wages						9,000,000
Coal .						8,400,000
Profit, inte	rest	on	capita	l, &c.	•	8,600,000
Val	ne o	fne	mer			£38.500.000

### C .- MANNER OF CONSUMPTION.

	Per Annum, Million Lbs.	Observation.
Daily papers	. 490	15 million copies daily.
Weekly, monthly, &c.	. 380	Issue 55 millions,
Books	. 150	85 million volumes.
Printing	. 1,020	Including engravings.
Schools	. 190	32 million children.
Public offices .	. 160	Stationery, blue-books, &c.
Letters	. 220	6 milliard letters.
Account-books, &c.	. 120	Including circulars.
Wall-paper	. 450	· · · · · · · · · · · · · · · · · · ·
Papier-mache, &c	. 205	
Total	. 2.365	

Wheels for railway waggons are now made of compressed paper, instead of iron. The dome of the new Palais de Justice at Brussels is all of paper. Flour barrels are made of it in the United States, one factory at Iowa turning out 1600 barrels daily, from 5 tons of paper, each barrel taking 6 lbs.

### D.—BRITISH PAPER-TRADE (1882).

		Imports	fio	m	Ex	wrt	o to			
Germany		•		£389,000	Australia.			£575,000		
Holland				238,000	India .			188,000		
Belgium				205,000	United States			57,000		
France			٠	118,000	Various .			487,000		
Various				258,00 <b>0</b>						
	٠				Total .			£1,307,000		
Total				£1.208.000		-	-	,,		

The above includes all kinds except hangings.

### PAPER-MONEY.

### A.—Amount in Millions £.

	1840.	1850.	1860.	1870.	1880.	Increase in 40 Years.
United Kingdom .	35	34	39	41	45	10
France	9	20	- 33	58	90	81
Germany	8	15	25	43	42	84
Russia	70	65	105	116	115	45
Austria	43	50	60	70	65	22
Italy	2	4	6	88	65	63
Spain, Belgium, &c.	18	30	36	42	64	46
Europe	185	218	804	408	486	301
United States	20	33	41	158	144	124
Spanish America .	6	11	17	36	65	59
British Colonies	1	2	10	14	28	27
Cuba	١	l	4	6	12	12
Japan					26	26
The World .	212	264	376	622	761	549

#### B.—Bank of England Issue (1878).

	υ	-104	74 PL	OL TUGEND	ISSUE (1010).	
Value of Note,				Number.	Amount.	Ratio, per Cent.
£5				2,208,000	£11,040,000	39
£10				507,000	5,070,000	18
£20-	50-10	00		160,000	8,030,000	28
£200	-300-	-500		7,000	2,120,000	8
£100	0			2,000	2,000,000	7
	Tota	d		2,884,000	£28,260,000	100

The notes cost one halfpenny each. The life of a bank-note in 1880 was under 70 days, the number issued during the year having been 15,260,000 for an aggregate amount of 338 millions, say £22 each. The average in the above table, for 1878, is only £10 each.

### C.-French Paper Money (1883).

Notes France				Number.	Amount,
5 .				175,000	35,000
20.	,			198,000	158,000
25 .				28,000	28,000
50.	,			4,725,000	9,450,000
100.				10,812,000	43,248,000
200 .	,			3,000	24,000
500.	,			625,000	12,496,000
1,000 .				1,263,300	50,532,000
<b>5,</b> 000 .				5	1,000
	Tota	1		17.829.305	115.972.000

### PARKS—PARLIAMENT.

<b>D.</b> -	–Cvi	REN	OY	VALUE	COMPAR	ED TO	Gold, 🌃
Year.				U. States.	Russia.	Italy.	Buenos Ayres.
1873				88	8 <b>6</b>	88	100
1875				87	84	92	100
1877	•			96	72	91	80
1879				100	70	89	74
1881				100	68	93	90
1883	•	•		100	64	100	100

See Money, Green-backs, Roubles.

### PARKS. A.—Remarkable Parks.

Name. Regent's	Place. London	Acres.		_	_	Place. Vienna	Acres. 2.300
Hyde	_ "	400					
Bois de Boulogne Phœnix	Paris . Dublin	2,100   1.760	Queen's	•	•	Edinburgh	407

### B.—PARKS IN UNITED KINGDOM.

### Inhabitants to an Acre.

343

			-		
Cities.		Area,	Park Acres.	Municipal Area,	Park Area.
Birmingham		8,400	211	46	1,736
Bradford .		7,200	215	26	889
Brighton .		2,400	106	45	996
Bristol .		4,500	442	47	475
Dublin .		10,100	1,753	31	175
Edinburgh		4,200	407	54	410
Glasgow .		6,100	447	96	1,293
Hull .		8,600	26	40	4,781
Leeds .		21,600	350	14	C81
Leicester .		3,200	65	89	1,256
Liverpool.		5,200	525	103	1,025
London .		75,400	1,790	48	1,114
Manchester		9,500	191	77	2,846
Newcastle		5,400	91	27	4,199
Norwich .		7,500	7	11	12,175
Nottingham		9,900	150	17	1,129
Oldham .		4,700	60	24	1,855
Plymouth		1,400	22	53	3,377
Portsmouth		4,500	81	29	8,239
Sheffield .		19,700	49	15	3,761
Sunderland		2,800	24	41	4,774
Wolverhampt	on	3,400	50	22	1,510

### PARLIAMENT.

### A.—House of Lords.

Princes		4 Earls .	139	Barons	272
		Viscounts Bishops		Total of members	515

	<b>B.</b> —	House	of Comm	ons (1884)	). 🕼
		Coun		•	
England		. 17	2 28	1 5	458
Wales		. 1			80
Scotland		. 3	2 2	26 2	60
Ireland		. 6	4 8	7 2	103
		_			
United	l Kingdo	m 28	3 33	9	651
C	.—Аст	s of ]	Parliamen	T SINCE 1	801.
_			Public.	Private.	Total.
1801-1	0.		1,322	2,514	3,836
1811-2	. 0		1,487	2,233	8,720
1821-3			986	1,979	2,965
1881-4	. 0		1,038	1,706	2,744
1841-5	0.		1,129	2,140	3,269
1851-6	iO .		1,158	<b>2</b> ,057	3,215
1861-6	8.		1,010	2,140	3,150
1869 - 8	<b>.</b> .	•	1,283	<b>2,</b> 828	4,111
82	years	•	9,413	17,597	27,010
	D.—P	RIME	Ministers		1.
Premier.		Months.	Public Act Passed.	s Monthly Average.	Period.
Addington		38	435	11	1801-1804
Pitt		20	195	10	1804-1806
Grenville .		14	180	13	1806-1867
Portland .		39	453	12	1807-1810
Perceval .		24	269	11	1810-1812
Liverpool .		178	1,975	11	1812-1827
Canning .		4	28	7	1827
Goderich .		5	27	5	1827-1828
Wellington		34	223	7	1828-1830
Grey .		44	378	8	1830-1834
Melbourne		5	48	10	1834
Peel		4	30	7	1834-1835
Melbourne		77	640	8	1835-1841
Peel		58	547	9	1841-1846
Russell .		68	653	10	1846-1852
Derby .		10	73	7	1852
Aberdeen.		25	274	11	1852-1855
Palmerston		37	332	9	1855-1858
Derby .		16	139	9	1858-1859
Palmerston		76	797	10	1859-1865
Russell .		8	78	10	1865-1866
Derby		20	229	11	1866-1868
Disraeli .		9	96	11	1868
Gladstone		62	565	9	1868-1874
Disraeli .		74	507	7	187 <b>4</b> –18 <b>50</b>

9,171

25 Premiers . 79 years

### PASSAGES—PATENT-OFFICE.

### 345

### PASSAGES.

Date.	Steamer.	Ports.	Days.	Hours.
1837	Great Western	Bristol—New York	. 19	2
1840	Britannia .	Liverpool—New York	14	13
1843	Great Britain .	'New York—Liverpool	14	1
1875	City of Berlin .	,, ,,	7	18
1876	Britannia .	"	7	11
1881	Arab	Cape Town—Plymouth	18	13
1882	Alaska	New York-Cork .	6	22

The Arab averaged 16, the Alaska 19 English statute miles per hour. The quickest passage from China to England was made in 1882 by the steamer Stirling Castle, from Hankow to London, in 29 days and 22 hours.

PASSENGERS.—The number of persons who crossed Waterloo Bridge, London, in a year, was as follows:—

1820			1,821,000	1850			4,295,000
1830			2,423,000	1860			4,878,000
1840		•	2,486,000	1863			5,145,000

In 1882 the number would not fall short of 7 millions. In 1875 there were 38½ million persons and 7½ million

vehicles that crossed London Bridge.

The Dover and Calais steamers carried 440,000 pas-

sengers in 1882.

There were in 1881 cleared from British ports (United Kingdom) 334,000 vessels, carrying over 3,000,000 persons,

of whom 750 were drowned, or 1 in 4000.

The ferry-boats between Liverpool and Birkenhead carry 22 million passengers yearly.

#### PATENT-OFFICE.

The returns for Great Britain and United States in 1880 compare as follows:—

		Great Britain.	United States.
Applications		. 5,517	19,402
Granted .	•	. 3,740	12,340
Receipts .		£190,000	£140,000
Average fees		. £52	£12
Average terms		. 14 years	17 years

The applications in Great Britain rose to 6241 in 1882.

### PAUPERS.

#### A.

1	Thousand	ds Omitted.	Comparative Cost.			
	Number.	Expenditure.	Per Pauper.	Per Inhab.		
				Pence.		
England	803	£8,015	£10.0	74		
Scotland	99	850	8.5	56		
Ireland	115	1,187	10.3	56		
United Kingdom	1,017	£10,052	9.8	68		
France	1.251	2,720	2-2	18		
Prussia	1,810	4.780	8-6	42		
Austria	1,220	3,700	3.1	25		
Italy	1,365	2,700	20	23		
Switzerland	140	1,050	7.5	88		
Spain and Portugal	600	1,100	1.8	18		
Belgium and Holland	1,006	1,280	1.8	82		
Scandinavia	300	950	3.2	28		
Total	8,208	£28,282	3:4	35		

The custom in the United Kingdom is to count the number of paupers existing on a given day, say 1st January, but on the Continent to give the bulk number relieved during the year. The actual number at any time in France, Italy, &c., may be taken as one-third the figures above stated.

### B.—PAUPERISM IN UNITED KINGDOM: NUMBERS.

			Thou	ısands Omi	tted.	Ratio to Population.				
Year.		England.	Scotland.	Ireland.	England.	Scotland.	Ireland.			
1850	•		921	79	308	5.11	2:72	4.61		
1860			851	77	45	4-26	2.58	0.77		
1870			1.079	126	74	4.69	3.78	1.33		
1880	•	•	803	99	115	3.09	2.66	2-21		
		Ex	penditure (	Thousands	Omitted).	Penc	e per Inhab	itant.		
1850	•		£5,395	£582	£1,827	72	49	68		
1860			5,455	663	531	66	53	22		
1870			7,644	905	814	80	65	36		
1880			8,015	849	1,187	74	56	56		

### C .- RELATIVE BURDEN OF PAUPERISM (UNITED KINGDOM).

	Thousand	o Omitted.	Paupers	Cost per	National	Burden of Pauperism.	
Year.	No. of Paupers.	Expendi- ture.	to Popu- lation.	Inhab- itant.	Income, Millions &.		
1850 . 1860 . 1870 . 1880 .	1,808 973 1,279 1,016	£7,804 6,649 9,363 10,051	4·75 3·35 4·06 2·90	68d. 55 70 68	620 760 950 1,200	1-26 1-14 0-99 0-84	

As compared with national earnings the burden was threepence in the  $\pounds$  in 1850, and is now just twopence.

### D.-Poor-Relief in England and Wales.

Period.		Annual Expenditure.	Per Inhab., Pence.	National Income, Millions &	Percentage of Burden.
1702-14 .		£910,000	41	65	1.40
1760-75 .		1,520,000	58	122	1-24
178 <b>3</b> -93 .		2,050,000	66	145	1.41
1815-20 .		7,106,000	152	220	8-23
1830-35 .		6,742,000	114	385	175
1841-50 .		5,250,000	74	490	1.07
1851-60 .		5,510,000	69	580	0.95
1861-70 .		6,740,000	77	720	0.94
1871-80 .		7,710,000	75	935	0.82

In the period just after Waterloo the burden was 4 times as great as in the past 10 years.

PAVING.—The cost of paving and keeping in order a street 10 yards wide and 1000 yards long in wood and stone is shown as follows:—

		Heavy ?	Traffic, £.	Light Traffic, &		
		Wood.	Stone.	Wood.	Stone.	
First cost	:	7,500 15,000	7,200 3,600	7,500 7,500	7,200 2,400	
Total		22,500	10,800	15,000	9,600	

Heavy traffic averages 100,000 tons, light 50,000 tons per yard per annum. The former wears wooden pavement an inch in five years. Some authorities estimate the first cost of paving per square yard as follows:—Stone 10, wood 14, asphalt 18 shillings.

### PAWN-OFFICES-PENGUINS.

#### PAWN-OFFICES.

348

### A .- Pawn-brokers in Great Britain.

Year.		No.	Per Million Inhab.	Year.	No.	Per ' Million Inhab.
1851		1,873	89	1871 .	8,450	132
1861		2,578	111	1881 .	4,372	146

The number of pledges is said to reach 190 millions per annum.

#### B.—MONTS DE PIETE.

		Borrowers.	Amount.	Average, Shillings
France .		2,970,000	£2,300,000	16
Spain .		235,000	985,000	84
Holland		602,000	260,000	9

### PEAT.

### A.—HEATING POWER.

Bog of Allen, Ireland .	100	Passy, France		52
Hartz Mountains.	61	Ham, "		49
Konigsbrunn	57	Troyes, "		32

The production in France is declining, not exceeding 300,000 tons per annum.

### B.—BRITISH PEAT BOGS.

	Acres.	Millions of Tons.	Value at 6 Pence per Ton.
Ireland	2,831,000	83,972	£850,000,000
Great Britain.	3,505,000	42,060	1,050,000,000
U. Kingdom .	6,336,000	76,032	£1,900,000,000

The average depth of peat is 12 feet, equal to a yield per acre of 12,000 tons of dried turf.

#### PEDESTRIANISM.

Name.		Miles.	Days.	Date.	Place.
Brown		550	6	Feb. 1880	London.
Hazel	•	660	6	" 1882	New York.

Mr. Hazel is an Englishman, and won £4000. In June 1874 Miss Richards, of Bristol, walked 1000 miles in 1000 consecutive hours, to gain £50 for her aged parents.

### PENGUINS. See Oil.

PENS.—Over 800 tons of steel are consumed yearly in making steel pens, Birmingham taking 500 tons.

•		Steel	llion l Pens .nnum.	Steel Pens per Inha- bitant.
United Kingdom			10	23
France		. 4	20	11
United States .		. 1	05	2

The world consumes over 4 million steel pens daily, that is nearly 3 tons.

PEPPER.—The annual production averages:—

		Million Lbs.			Million Lbs.
Sumatra .		28	Malabar		4
Siam .		8	Borneo		3
Malacca .		7	Total		50

**PHOTOPHONE.**—Sound was conveyed along a beam of light, for a distance of 700 feet, by Mr. Graham Bell, in September 1880.

#### PHTHISIS.

### A .- RATIO OF CONSUMPTION TO ALL SICKNESS.

	Per	Cent.		Per	Cent			Per	Cent
Needle-makers	١.	70	Hairdressers		32	Masons			13
File-makers .		63	Weavers .		25	Millers			11
Lithographers		48	Painters .		25	Brewers			11
Grinders			Printers .		22	Tanners			9
Tobacconists		37	Shoemakers		19	Bakers .			7
Watchmakers		37	Glaziers .		18	Butchers			7
Stonecutters.		36	Hatters .		16	Charcoal-	bų:	rnei	<b>8</b> 2
Glassworkers		35	Carpenters		14	Miners .			1

The above table has reference only to the U. Kingdom.

### B.—DEATHS FROM CONSUMPTION (Dr. HIRSCH).

		Per 1000.		Per 1000.		Per 1000.
Glasgow .			Boston		England	30
Philadelphia		56	New Orleans .	37	Dresden	30
New York .		53	London	37	Massachusetts	30
Edinburgh.		48	Bavaria	37	Algiers	29
Paris		41	Copenhagen	34	St. Helena .	22
			Malta			

The above table includes only certain forms of consumption.

### C.—DEATHS FROM CONSUMPTION (1866).

			Per 1000.	ļ			Per 1000.
London .			121	Paris .			170
New York	•	•	142	Vienna.			252

# D.—PHTHISIS IN UNITED KINGDOM. Deaths per Million Inhabitants per Annum.

England		1850-59		Scotland		1877	2,294
,,		1860-69		Ireland			2,185
••		1870 <b>–79</b>	2,205	London		1879	2,476

### PHYSICIANS.

		A.		
	Doctors and Surgeons.	Apothecaries and Midwives,	Total.	Burgeons, per 100,000 Inhabitants
England.	. 15,920	•••	•••	64
Scotland.	. 8,455	•••	•••	91
Ireland .	. 3,560	•••	•••	69
				_
U. Kingdom	22,935	•••	•••	66
France .	. 10,743	19,079	29,822	29
Germany	. 82,000	·	•	70
Russia .	. 18,475	6,752	20,227	18
Austria .	. 10,000	·	•••	27
Italy .	9,400	•••		83
Spain .	5,200	•••	•••	81
Belgium .	. 2,893	1.847	4.740	54
Scandinavia	. 1,120	-,	-,	14
United States	<b>65,000</b>		•••	122

The number of medical students in London in October 1882 was 949.

### B.—Degrees of M.D. in France.

Years. 1801–14				Number.   8.178	Years. 1849-69 .			Number. 9.145
1815-30	:	÷	:	6,423	1870-82 .		:	5,901
1831-48	•	•		8,468	82 years.	•	•	33,115

### PIGEONS. See Birds.

### PIGS.

### A.—Pigs to Population.

	Thousand	s Omitted.	No. per 100 Inhab.		
	1855.	1880.	1855.	1890.	
United Kingdom Continent .	 2,810 36,285	3,190 42,118	10 16	9 15	
Europe . United States	 89,095 31,940	45,308 47,680	15 118	14 93	
Total	 71,035	92,988	25	25	

### B.—Number and Slaughter (1880).

	Tho	usands Omi	Average	Lbs. of	
	No. of Pigs.	Killed Yearly.	Meat, Tons.	Lbs. per Carcasa.	Meat per Inhab.
United Kingdom .	3,190	2,100	145	155	9
France	5,810	3,900	240	188	15
Germany	7,130	4,800	285	183	15
Russia	10,514	7,000	445	140	12
Austria	7,080	4,700	275	129	16
Italy	1,570	1,000	55	124	4
Spain and Portugal	5,323	3,600	130	81	14
Belg. and Holland	1,006	650	86	125	9
Scandinavia	1,040	700	34	109	9
Switzerland	335	200	10	112	8
Roumania, &c	2,310	1,500	60	88	19
Europe	45,308	30,150	1,715	129	12
United States	47,680	32,000	1,420	100	60
Canada	1.425	900	45	112	23
Australia	815	500	20	90	15
River Plate	362	200	8	90	-6
Cape Colony	164	100	4	90	8
Total	95,754	63,850	8,212	115	19

PILCHARDS.—The Cornishmen take 30 or 35 millions yearly; value, one shilling per 100. Exportation, 12,000 barrels.

**PILGRIMS.**—The number that passes through Suez en route for Mecca averages 35,000, of whom one-fourth are Turks, one-fourth Egyptians, the rest being Moors, &c.

### PILOT-BOATS.

				Boats,	Pilots.
England			•	692	2,066
Scotland				226	432
Ireland .	•			132	395
United 1	Kingd	lom		1,050	2,893

The largest pilot-boat is only 45 tons.

PINS.—Great Britain makes 330 millions weekly, or 9 per inhabitant, as compared with 105 millions a week in 1840, or 4 per inhabitant.

### PLAGUE.

### A.—LIST OF PLAGUES (MILROY).

	15	601-16 <b>00</b> .	1601-1700.	1701-1800.	1801-1841.
England		15	12	0	0
France		14	11	1	0
Germany		12	19	4	1
Low Countries.		2	14	Ō	Õ
Russia and Scandin	avia	2	7	4	2
Italy and Levant	•	26	15	12	11
Spain		5	8	8	1
_		_	_	-	_
Total .		76	81	24	15

### B.—Great Plague of 1346

### Victims (Thousands Omitted).

Naples		60	Venice .	70	Paris .	 50
Florence		100	Vienna .	40	Strasburg .	 26
Sienna		70	Marseilles	56	London .	100
Parma .		40	Valencia.	100	Norwich .	50
Genoa		40	Avignon .	60	Dublin .	 14

### C .- REMARKABLE PLAGUES.

Date.		Place.	Deaths	Weeks.	Deaths per Week.
1656		Naples	380,000	28	13,400
1665		London	68,800	<b>3</b> 3	2,100
1720		Marseilles	39,100	86	1,100
1771		Moscow	87,800	32	2,700
1778		Constantinople .	170,000	18	9,500
1798		Cairo	88,000	25	8,500
1812		Constantinople .	144,000	13	11,100
1834		Cairo	57,000	18	8,200
1835		Alexandria	14,900	17	900
1871		Buenos Ayres .	26,300	11	2,400

### D.—RELATIVE MORTALITY.

Date.		Place.	Died, per Cent.	Recovered, per Cent.	Authority.
1798		Cairo	67	83	Genettes.
1798		Aboukir	25	75	M'Grigor.
1813		Malta	50	50	Greaves.
<b>1</b> 815		Corfu	91	9	White,
1834		Cairo	29	71	Gaetani
1835		Alexandria .	35	65	Clot Bey.
1871	•	Buenos Ayres	40	60	Bosch.



#### PLAGUE—PLANETS.

### 353

### E.—Cholera.

		Deaths (Thousands Omitted).							
		1832.	1848.	1854.	1866.	1873.	Total.		
Great Britain .	_	53	55	22	18		148		
France		103	134	146	44	63	490		
Germany		60	127	119	33	52	891		
Austria		99	145	218	220	436	1.118		
Other countries .		250	800	400	245	70	1,265		
Total		565	761	905	560	621	8,412		

The death-ratio in 1832 averaged 38 to 40 per cent. of cases, but it was lower in subsequent visitations.

### F.—CHOLERA OF 1866.

### Deaths per 10,000 Inhabitants.

London		18	Paris , .	66	Madrid .		102
<b>Dublin</b>		41	Berlin .	83	Brussels		184
Vienna		51	Naples .	89	Palermo .		197
Marseilles		64	St. Petersburg	98	Constantine	ple	738

The greatest mortality was at Rome and Madrid on Sundays; at London and Berlin on Wednesdays; and at Paris on Saturdays. This cholera was more deadly in Italy than elsewhere, and worse than any previous visitations, 56 per cent. of all men, and 54 per cent. of women attacked, falling victims to it.

### PLANETS.

			Millions of Miles.						
		Miles Diameter.	Mean Distance from Sun.	Least Distance from Earth.	Greatest Distance from Earth				
Mercury		 2,962	85	47	136				
Venus .	•	7,510	66	23	160				
Earth .		7,901	91						
Mars .		4,920	139	62	245				
Jupiter .		85,390	476	409	592				
Saturn .		71.904	872	831	1,014				
Uranus .		33,024	1,753	1,746	1,929				
Neptune		36,620	2,746	2,629	2,863				

### B.—RATIOS OF SIZE, WEIGHT, &c.

	Size.	Weight.	Density.	Number of Days in Year.
Earth	. 100	100	100	865
Mercury	. 5	7	124	88
Venus	. 80	79	90	225
Mars.	. 14	12	96	687
Jupiter	. 138,700	30,000	20	4,333
Saturn	. 74,600	9,000	12	10,759
Uranus	. 7,200	1,300	18	80,687
Neptune	. 9,400	1,700	17	60,127

### PLATE.

### A.—QUANTITY STAMPED IN UNITED KINGDOM.

		Annual A	Average, Os.	4	Des Inhah	
Years. 1801-10		Gold. 5,680	Silver. 1,087,000	Average Annual Value. £294,000	Per Inhab., Pence.	
1811-20		6,390	1,058,000	291,000	4	
1821-30		6,814	1,157,000	817,000	4	
1831-40		6,445	1,104,000	801,000	3	
1841-50		7,333	1,007,000	281,000	24	
1851-60		38,415	930,000	<b>373,000</b>	3₹	
1861-70		29,204	875,000	815,000	2	
1871-80		42,190	790,000	370,000	2	

The sums received in payment of duty on gold and silver plate during the 10 years ending March 1882 were as follows:—

			10 Years.	1882.	Pence per Inhab. (1882).
England .			£682,000	£66,830	0.64
Scotland .			17,700	1,420	0.10
Ireland .		•	5,100	460	0.02
United I	Kingdo	m.	£704,800	£68,710	0.49

### B.—QUANTITY STAMPED IN FRANCE.

	Tho	usands Omi	tted.	Per	Amount	Per	
Yeur.	Gold, Oz.	Silver, Oz.	Value of Both.	Inhab., Penco.	of Duties.	Inhab., Pence.	
1830	101	1,739	£839	6	£52,000	0.36	
1840	164	2,290	1,229	81	77,000	0.52	
1850	169	1,840	1.136	8	72,000	0.48	
1860	288	2,294	1,611	11	121,000	0.75	
1869	380	2,379	2.115	13	149,000	0.92	
1878	409	2,456	2,251	141	252,000	1.60	

355

#### PLEBISCITES-POLICE.

PLEBISCITES.—The principal in France have been as follows:—

Year.					For.	Against.
1793		•	•		1,801,000	12,000
1803			•		8,568,000	9,000
1815					1,302,000	4,000
1852					7,828,000	253,000
1870	•	•	•	•	7,336,000	1,561,000

POISON.—Deaths from accidental poisoning in England, in 1878, were 235 males and 118 females, apart from 215 cases of suicidal poisoning. The accidental were as 6 in 10,000 deaths.

### POLICE. A.—Cost in Cities.

	Thousands.	Per Inhab. Pence.		Thousands.	Per Iuhab., Pence.
London .	. £1,060	68	Genoa .	. £15	21
Paris .	. 1,160	122	Florence	. 14	20
Vienna .	. 890	99	Turin .	. 13	18
Berlin .	. 70	16	Antwerp	. 13	19
S. Francisc	o 48	52	Trieste	. 12	27
Buda .	. 38	27	Christiania	. 11	86
Rome .	. 30	24	Frankfort	. 7	14
Leipsic .	. 24	- 49	Liege .	. 6	12
Bucharest	. 22	26	Venice .	. 6	12
Stockholm	. 21	<b>3</b> 3	Palermo	. 6	6
Copenhager	n 20	24	Stuttgart	. 14	28

### B.—Police of United Kingdom.

	Men.	Cost.	Per Man.	Police per 10,000 Inhab.	Cost per Inhab., Pence.
England	33,173	£3,440,000	£104	13	29
Scotland	3,562	320,000	90	10	21
Ireland	14,772	1,410,000	95	28	66
U. Kingdom	51,507	5,170,000	100	14	83

### C.-London and Paris Compared.

		London.	Paria.	Per 10,000 Inhab.		
Number of men		10.940	8.250	London. 29	Paris. 39	
Arrests made .	:	79,490	231,140	210	1,065	

The London police cost £97 a year, the Paris £140, per man. The London man arrests 7 persons, the Paris 29 persons, per annum. For each offender (including drunkenness and misdemeanours), the police expenditure is £13 in London, and £5 in Paris.

### POOR-POPULATION.

## POOR. See Paupers, Taxes.

POPES.
English . . 1 | African . .

356

English			1	African		•	2	Syrian Greek			8
Dutch		•		Austrian		•			•	•	14
Swiss	•	•		Spanish	•	•		French Italian	•	•	15 197
Portugues	Ð	•	1	German	•	•	0	Terman	•	•	19/

### B.—Duration of Reign.

Over 20 years				11	5 to 10 years Under 5 ,,	•			57
10 to 20 ,,	•	•	•	69	Under 5 ,,	•	•	•	116

### POPULATION.

### A.

	Thousands Omitted.							
	1800.	1820.	1840.	1860.	1880.			
U. Kingdom .	15,570	20,710	26,540	28,730	34,650			
France	27,720	30,380	34,102	37,290	37,430			
Germany	22,330	26,040	30,590	36,410	45,260			
Russia	38,140	44,220	54,080	65,730	84,440			
Austria	21,230	23,620	28,170	32,240	37,830			
Italy	13,380	15,790	18,610	21,820	28,910			
Spain	10,440	11,680	11,820	15,560	16,290			
Portugal	3,080	8,210	3,490	4,030	4,350			
Belgium	2,960	3,280	4,020	4,690	5,480			
Holland	2,280	2,510	3,130	3,620	4,060			
Denmark	900	1,040	1,290	1,580	1,960			
Sweden	2,330	2,580	3,210	3,870	4,610			
Norway	880	1,010	1,280	1,590	1,950			
Switzerland .	1,820	2,040	2,310	2,530	2,810			
Greece )		1	1,020	1,310	1,690			
Servia	9,200	10,300 }	10.100	1,240	1,920			
Roumania (	9,200	10,500	12,490	4,390	5,330			
Turkey )				10,230	8,310			
Europe	172,260	198,410	236,150	275,860	312,990			
U. States	5,310	9,640	17,070	31,440	50,410			
S. America .	20,000	22,000	23,500	24,800	25,600			
British India .	70,000	83,000	98,500	143,300	191,400			
Canada	470	840	1,730	3,360	4,340			
Australia	10	90	410	1,330	2,880			
Cape Colony .	40	80	270	420	1,030			
Total .	268,090	314,060	377,630	480,510	588,550			

In the above table Lombardy is counted Italian, and Sleswig German, territory.



### POPULATION.

### B.—Inhabitants per Square Mile.

	1800.	1820.	1840.	1860.	1880.
United Kingdom	131	172	221	240	290
France	135	148	165	175	180
Germany .	108	124	145	174	217
Russia	18	20	25	30	40
Austria	90	99	118	134	158
Italy	120	138	162	190	247
Spain	51	58	59	78	82
Portugal .	88	92	101	115	124
Belgium .	260	287	348	409	480
Holland .	177	195	228	260	812
Denmark .	60	71	89	108	127
Sweden .	14	15	19	23	27
Norway .	7	8	11	13	15
Switzerland .	114	127	145	160	175
Greece	33	40	52	65	84
Turkey, &c	70	80	100	120	120
Europe	48	54	64	75	85
United States	12	6	10	11	14
Canada	•••	•••	•••	•••	1
Australia .		•••	•••	•••	1
Cape Colony.		1	2	3	4
British India	150	161	197	<b>15</b> 8	210
South America	3	3	3	3	3

### C.—United Kingdom.

	Thou	usanda Omi	tted.	Inhabitants per Square Mile.			
Year.	England,	Scotland.	Ireland.	England.	Scotland.	Ireland	
1066	2,150	350	1,000	37	11	32	
1381	2,360	400	1,100	41	13	35	
1528	4,356	550	770	75	17	24	
1672	5,500	900	1,320	96	29	41	
1712	6,280	1,050	2,099	110	34	66	
1754	7,020	1,265	2,373	120	40	74	
1780	8,080	1,430	3,050	140	47	96	
1801	8,893	1,608	5,216	155	53	165	
1811	10,164	1,806	5,957	175	60	189	
1821	12,090	2,092	6,802	207	68	212	
1831	14,001	2,364	7,768	241	77	243	
1841	16,038	2,620	8,195	275	86	0	
1851	18,071	2,889	6,552	310	94		
1861	20,202	3,062	5,800	347	10		
1871	22,905	3,366	5,387	391	1		
1881	26,110	3,734	5,160	443			

### D.-ENGLAND, URBAN AND RURAL

			,	O		
			Rural.	Urban.	Total.	Rural Ratio
1851			8,772,000	9,156,000	17,928,000	49.0
1861			9,133,000	10,933,000	20,066,000	45·5
1871			9,802,000	12,911,000	22,713,000	43-2
1881	•	•	10,523,000	15,445,000	<b>25,96</b> 8,000	40.4

### E.—Towns of England.

			Populat	ion in Thou	sands.	
		1801.	1821.	1841.	1861.	1861.
London		959	1,879	1,948	2,804	8,815
Liverpool		82	138	286	444	552
Manchester		77	129	243	358	549
Birmingham	ıl	71	102	183	296	402
Leeds .		53	84	152	207	309
Sheffield		46	65	111	185	284
Bristol .		61	85	125	154	207
Nottingham		29	40	52	75	187
Bradford		13	26	67	106	184
Hull .		30	45	67	97	155
Newcastle		33	42	70	109	145
Brighton		7	25	49	87	108
		1,461	2,160	3,353	4,922	6.897
Rest of Eng	land .	7,432	9,930	12,685	15,280	19,213
Total pop	ulation	8,893	12,090	16,038	20,202	26,110
Ratio of 12	towns.	16 p. c.	18 p. c.	21 p. c.	24 p. c.	26 p.c.

### F.—United States.

Year.			Thousands Omitted.									
			New England.	Middle,	Southern.	Western.	Pacific.	Total,				
1790			1,010	1,342	1,580			3,932				
1800			1,233	1,807	2,214	54		5,308				
1810			1,472	2,479	2,997	292		7,240				
1820			1,659	3,194	3,932	849		9,634				
1830			1,954	4,138	5,164	1,610		12,866				
1840			2,236	5,088	6,367	3,378		17,069				
1850			2,724	6,593	8,288	5,409	178	23,192				
1860			3,145	8,294	10,297	9.222	485	31,443				
1870			3,506	9,770	11,330	13,188	764	38,558				
1880			4.010	12,375	15,254	17,509	1,262	50,410				



#### POPULATION.

#### G .- THE UNITED STATES IN DETAIL

			T	housand	s Omitte	d.	
		1800.	1820.	1840,	1860.	1870.	1880.
New York .		589	1,372	2,429	3,881	4,383	5,088
Pennsylvania		602	1,048	1,724		3,522	
Ohio		45	581	1,519	2,340	2,665	3,198
Illinois .			55	476		2,540	
Missouri .		1	67	384		1,721	
Indiana .		6	147	686		1,681	
Massachusetts	: :	423	523	738	1,231	1,457	1,78
Kentucky .		221	564	780	1,156	1,321	
		1000	9	212	749	1,184	
Michigan . Iowa		***	1	43			
		1111		100	675	1,194	
Texas		100	100		604	819	
Tennessee .		106	423	829	1,110	1,259	
Georgia .		163	341	691	1,057	1,184	
Virginia .		880	1,065	1,240	1,596	1,225	
North Carolina		478	639	753	993	1,071	
Wisconsin .				31	776	1,055	
Alabama .		1000	128	591	964	997	1,265
Mississippi .		9	75	376	791	828	1,135
New Jersey.		211	277	373	672	906	1.131
Kansas .					107	364	996
South Carolina		346	503	594	704	706	996
Louisiana .		150	153	352	708	727	940
Maryland .		342	407	470	687	781	935
California .	2 2				380	560	863
Arkansas .	5 6		14	98	435		
Minnesota .					172	440	781
Maine	1	152	298	502	628	627	649
Connecticut		251	275	310	460	537	623
West Virginia		10000		0.00	0.77	442	618
Nebraska .		***	10.00	***	29	123	
New Hampshire		184	244	285	326	318	
Vermont .		154	236	292	315		
Rhode Island						331	
		69	83	109	175	217	277
Delaware .		64	73	78	112	125	147
Florida .			144	54	140	188	269
Colorado .		1000	1000	***	34	40	194
Oregon .				***	52	91	174
Utah		***	***	.,.	40		144
Dakota .				161	5	14	133
Territories .		13	33	50	189	344	567
The Union		5,308	9,633	17,069	31,443	38,558	50,150

The increase of population since 1830 (see p. 361) has averaged 32 per cent. every 10 years. At this rate there will be 88 millions in 1900.

### H.—Great Towns in 1831 and 1881.

#### Thousands Omitted.

		1831.	1881.			1831.	1881.
Amsterdam.		201	326	London .	. 1	1,655	3,815
Antwerp .		65	182	Lyons		146	377
Belfast .		53	185	Madrid .		205	396
Berlin .		220	1,129	Manchester.		238	549
Birmingham	ı	142	402	Manilla .		134	270
Bombay		229	644	Marseilles .		116	360
Bordeaux		94	212	Milan		125	821
Boston		61	363	Moscow .		308	694
Brussels		102	407	Munich .		65	230
Buda .		67	870	Naples .		354	. 491
Buenos Ayr	<b>es</b>	81	212	New Orleans		46	216
Cairo .		333	815	New York .		203	1,243
Calcutta		280	430	Palermo .		168	245
Constantino	ple	590	819	Philadelphia		167	868
Copenhagen	•	109	235	Prague .		85	169
Christiania		21	120	Rio Janeiro		145	275
Dresden		70	221	Rome		128	301
Dublin		227	350	Rotterdam .		66	153
Edinburgh		130	229	St. Petersburg		324	703
Florence		82	168	Smyrna .		115	155
Genoa.		83	179	Stockholm .		79	163
Glasgow		164	572	Stuttgart .		32	117
Hamburg		112	454	Turin		114	241
Havana		111	230	Tunis		108	210
Leipsic		42	149	Venice .		110	142
Lisbon		202	224	Vienna .		280	731
Liverpool		165	552	Warsaw .		151	318

See Cities.

### I.—Towns of France.

		Popula	tion in The	Ratio to	Ratio to Pop. of France.				
ll .		1801.	1835.	1881.	1801.	1835.	1881.		
Paris		553	881	2,226	2.0	2.6	5-9		
Lyons		110	162	377	0.4	0.5	1.0		
Marseilles		111	125	360	0.4	0.4	1.0		
Bordeaux		91	110	212	0.3	0.3	0.6		
Lille		55	77	178	0.2	0-2	0.5		
Toulouse .		50	62	140	0.2	0.2	0.4		
Nantes .		42	78	124	0-2	0-2	0.3		
Rouen		48	91	106	0.2	0.3	0.3		
Havre		16	24	106	0.1	0.1	0.3		
Total		1,076	1,610	3,829	4.0	4.8	10-3		



### POPULATION.

### K .- Increase of Population in United States.

			Natural.	Immigration.	Total, per Ceut.
1831-40			28.02	4.65	82.67
1841-50			26.19	9.68	<b>35</b> ·87
1851-60			24.20	11:38	85.58
1861-70		٠.	15.38	7.25	22.63
1871-80			22.78	7:29	80.07

### L.—Towns over 20,000 Population.

ĺ	Number	Thousand	s Omitted.	Urban,	Towns
	of Towns.	Town Pop.	Total Pop.	Ratio per Cent.	per 10,000 sq. miles.
England	101	11,420	26,110	44	17
Scotland	10	1,310	8,734	35	3
Ireland	9	820	5,160	16	3
U. Kingdom	120	13,550	35,004	39	10
France	91	6.810	37,670	18	5
Germany	114	7,420	45,260	16	5
Russia	88	5,220	84,440	6	0.4
Austria	37	2,550	37,830	7	1.3
Italy	76	4,570	28,910	16	7
Spain	28	1,940	16,270	12	1.5
Portugal	3	420	4,350	10	1
Belgium	24	1,510	5,480	27	22
Holland	19	1,140	4,060	28	10
Denmark	2	260	1,960	13	1.3
Sweden	6	350	4,610	l 8	0.4
Norway	5	210	1,940	11	0.4
Switzerland .	6	230	2,810	l 8	4
Greece	4	100	1,690	6	2
Roumania	12	620	5.340	11	2 2
Servia	1	270	1,720	6	0.5
Turkey	4	960	8,040	12	07
Europe	640	48,130	327,404	15	1.6
United States .	102	9,160	50,310	18	0.3
Canada	9	370	4,340	9	l ·
Australia	16	710	2,880	25	
Total	767	58,370	384,934	15	0.2

The above does not include all urban population: for example, see England in Table E.

#### M.-Towns in United States.

Population. Over 100,000		1800. 0	1820. 2	1840. 4	1860. <b>9</b>	1880. 20
50 to 100,000		2	1	1	9	16
20 to 50,000		2	2	16	25	66
		_	_		_	
Total .		4	5	21	43	102

The aggregate of urban compared with total population in the United States was as follows:—

	Thousands Omitted.								
			Urban,	Total.	Ratio of Urban.				
1800			340	5,310	6.4				
1820			460	9,640	4.8				
1840			1,550	17.070	9·1				
1860			4,240	81,440	13.5				
1880		•	9,160	50,310	18.2				

The urban class comprises only towns over 20,000 population.

#### N.-GREAT POWERS OF EUROPE.

			Thousands Omitted.								
		1380.	1480.	1580.	1680.	1780.	1880.				
England .	-	2,360	3,700	4,600	5,532	9,561	35,004				
France .		11,240	12,600	14,300	18,800	25,100	37,400				
Prussia .		600	800	1,000	1,400	5,460	45,260				
Russia .		1,200	2,100	4,300	12,600	26,800	84,440				
Austria .		2,300	9,500	16,500	14,000	20,200	37,830				
Italy		8,400	9,200	10,400	11,500	12,800	28,910				
Spain	•	7,500	8,800	8,150	9,200	9,960	16,290				
Total		33,600	46,700	59,250	73,032	109,881	285,134				

In the above, England at present stands for United Kingdom, and Prussia for the German Empire.

#### O.—Density of English Towns.

#### Inhabitants per Acre.

Norwich .		12	Bradford .	. 28	Bristol		49
Leeds		15	Portsmouth	. 31	London		49
Sheffield .		16	Leicester .	. 42	Plymouth .		54
Nottingham		18	Hull	. 42	Manchester		85
Oldham .		26	Birmingham	. 48	Liverpool .		106



#### PORTS.

### P.—EARLY TOWNS OF ENGLAND (A.D. 1377).

					Newcastle .	4,300
York		11,400	Lincoln .	5,500	Oxford	3,800
Bristol					Gloucester .	
Plymouth		7,300	Canterbury	4,700	Leicester .	8,200
Coventry .	•	7,100	Colchester	4,500	Shrewsbury	8,000

#### PORTS.

## A.—Tonnage of Entries.

#### Thousands Omitted.

London	8,210	Hamburg.	2,315	Hull	2,010
New York.	7,506	Havre	2,260	Genoa	1,640
Liverpool .	7,320	Glasgow .	2,170	Boston	1,560
Marseilles .	3,260	Dublin .	2,120	Baltimore .	1,365
Antwerp .	2,720	Belfast .	2,030	Philadelphia	1,260

### B.—Foreign Trade of British Ports (1880).

#### Millions &.

		1r	nports.	Exports,	Total.	Ratio.	
London .			141	<sup>-</sup> 53	194	277	
Liverpool			107	84	191	27:3	
Hull .			20	19	39	5.6	
Glasgow .			12	12	24	8.4	
Southampton			10	9	19	27	
Tyne ports			7	7	14	2.0	
Leith .			9	3	12	17	
Bristol .			8	2	10	1.5	
Cardiff .			ī	5	6	0.9	
Dublin .			ī	2	8	0.5	
Belfast .			1	2	8	0.5	
Various .			94	89	183	26.2	
Total			411	287	698	100 <b>·0</b>	

#### C .- TRADE OF UNITED STATES PORTS.

		Millions &	•	Ratio.			
	Imports.	Exports.	Total.	Importa.	Exports.	Total.	
New York	103	69	172	68	45	57	
Boston	14	13	27	10	l 8 l	9	
San Francisco .	9	11	20	6	7	61	
New Orleans .	8	14	17	2	10	6	
Philadelphia .	7	8	15	5	5	5	
Baltimore	8	8	11	2	5	31	
Various	12	29	41	7	20	13	
Total	151	152	303	100	100	100	

#### POST-OFFICE.

### A.—Correspondence in 1881.

•			Mil	lions.		Per
		Letters.	Papera.	Sundries.	Total.	Inhah.
United Kingdo	m.	. 1,299	134	249	1,682	49
France .		. 595	354	401	1,350	36
Germany .		. 721	452	126	1,299	29
Russia .		. 110	75	7	192	2
Austria .		. 483	79	37	599	16
Italy .		. 196	86	77	359	13
Spain .		. 71	41	6	118	7
Portugal .		. 16	8	2	26	6
Belgium .		. 91	69	37	197	36
Holland .		. 71	35	14	120	30
Denmark .		. 25	26	2	53	27
Sweden and No	rway	. 46	33	2	81	12
Switzerland		. 65	50	15	130	46
Greece .		. 3	•••	1	4	2
Roumania.	•	. 6	2	•••	8	2
Europe .		. 3,798	1,444	976	6,218	20
United States		. 1.155	761	327	2,243	45
Canada .		. 57	15	7	79	18
Australia .		. 36	36	1	73	27
India .		. 121	10	4	135	1
Japan .		. 48	14	1	63	2
South America		. 36	9	9	54	2
Algeria .		. 7	1		8	3 1
Egypt .		. 3	1	•••	4	1
Java	•	. 4	1	1	6	1
The World	•	. 5,265	2,292	1,326	8,883	13

### B.—LETTERS IN FRANCE AND UNITED KINGDOM.

Davi	Period.		Annual Averag	ge, Millions.	Number per Inhabitant.		
ren	oa,		U. Kingdom.	France.	e. U. Kingdom. Fran		
1841-50	<u> </u>	•	277	122	10	4	
1851-60			466	210	17	6	
1861-70			724	340	24	9	
1881 .			1,299	595	37	16	

#### C .- BRITISH POSTAL REVENUE.

Year.		mount,	Per Inhab.,	Yoar.	Amount, Thousands &.	Per Inhab.,
1643.		5		1744	. 235	7
1663.		22	1	1790	. 480	12
1685.		65	3	1835	. 2,353	22
1707.		111	5	1881	. 9,028	62

### D.—British Postal Traffic.

	Millions of	Letters, Pape	rs, &c.	90-41-
	Received from	Sent to	Total.	Ratio.
United Kingdom	. 1,526	1,526	1,526	907
America	. 22	22	44	2.6
European Continent	. 87	44	81	4.8
The East	. 4	9	18	0.8
Australia	. 4	6	10	0-6
Africa.	. 2	6	8	0.2
Total	. 1,595	1,613	1,682	100-0

### E.—BRITISH POSTAL TARIFF.

		Pence.	1			Pence.	
London to York Edinburgh . Dublin Gibraltar	1645. . 6 . 8 	1885. 11 13 16 84	1881. 1 1 1 21	London to New York Madrid Rio Janeiro	1645.	1835. 26 26 42	1881. 2½ 2½ 4
In the rei	gn of	Charle	s I. tl	he rates of po	stage '	were :	_
Under 80 m 80-140 .	iles .	•	Pence. 2 4	Over 140 mil To Scotland	les .	•	Pence. 6 8

#### POTATOES.

	Tho	usands Om	itted.		
	Acres.	Tons.	Value of Crop, &.	Cwts, per Acre.	Lbs. per Inhab.
England	400	1,400	4,600	70	120
Scotland	189	665	2,200	70	390
Ireland	854	2,970	9,400	70	1,320
United Kingdom	1,443	5,035	16,200	70	315
France	3,200	9,500	28,300	59	550
Germany	6,800	21,300	57,500	62	1,060
Russia	3,100	9,200	22,300	60	250
Austria	3,500	8,100	20,200	46	510
Italy and Spain .	450	1,120	3,000	50	55
Holl. and Belgium	750	2,800	8,100	75	580
Scandinavia	560	1,750	5,000	64	460
Europe	19,803	58,805	160,600	60	450
United States .	1,900	3,500	10,600	37	150
Canada, &c	1,100	3,300	9,400	60	
Total	22,803	65,605	180,600	57	

Potatoes were introduced into Germany in 1710, into

Russia in 1769, and into Scotland some years later. The man who sowed the first field of potatoes in Scotland died in 1850.

POULTRY.		A.				
Great Britain . Ireland United Kingdom	. 28 . 13	Per 100 Inhab. 94 255 117	France . Germany Italy			Per 100 Inhab 230 140 110
	B.—I	BRITISH	Poultry.			
Hens	Omi . 23,	isted. 500 700	Geese . Turkeys	:	On	usends nitted. i,500 i,400

#### A.—Power Available for Industries.

			Thousand	F.		
	Human Workers,	Horses.	Steam, Horse- power.	Rivers, Horse- power,	Total Horse- power.	Ratio
U. Kingdom .	22,570	2,906	7,780	4,520	17,466	7.5
France	27,765	2,833	3,513	6,130	15,253	6.6
Germany	30,074	3,360	4,325	6,040	16,735	7-2
Russia	49,520	16,200	1,365	36,115	58,630	25.0
Austria	25,008	3,760	1,280	5,830	13,370	5.7
Italy	18,310	658	480	3,960	6,929	2.9
Spain	11,120	590	483	2,220	4,405	1.8
Portugal	2,780	70	66	640	1,054	0.5
Belgium	3,776	283	595	370	1,626	0.7
Holland	2,690	280	216	640	1,405	0.6
Scandinavia .	5,810	970	416	6,360	8,327	3.6
Switzerland .	1,815	110	253	650	1,195	0.5
Roumania	3,520	550	90	1,160	2,152	0-9
Servia	1,070	140	35	450	732	0.3
Greece	1,020	97	20	420	640	0-2
Europe	206,848	32,807	20,917	75,505	149,919	64.0
United States	30,116	11,202	8,152	61,150	83,516	36.0
Total	236,964	44,009	29,069	136,655	233,435	100-0

All the above powers may be considered in active use, except the rivers, of which less than one-tenth of the power is turned to any use.



#### POWER-PRESS.

#### B.—RELATIVE DISTRIBUTION OF POWER.

	Human.	Horses,	Steam.	Rivers.	Total.	Horse-power per Square Mile.
U. Kingdom .	13	17	44	26	100	145
France	18	19	23	40	100	76
Germany .	18	20	26	86	100	79
Russia	8	26	2	64	100	25
Austria	18	27	9	46	100	49
Italy	26	9	7	58	100	61
Spain	25	13	11	51	100	25
Portugal	27	7	6	60	100	29
Belgium	23	18	86	23	100	142
Holland	19	20	15	46	100	70
Scandinavian .	7	12	5	76	100	27
Switzerland .	15	10	21	54	100	75
Roumania	. 17	25	4	54	100	44
Servia .	15	20	5	60	100	86
Greece	. 15	15	3	67	100	82
Europe	14	22	14	50	100	88
United States	. 4	13	10	73	100	23

#### PRESS.

## A.—Newspapers of all Languages.

		Tot	-1		99 9	330		
French .		1,810	Hindoo		590	Various .		1,443
						Russian .		170
English .		13,378	Italian		1,165	Portuguese	•	310

### B.—Daily Papers.

		Number.	Daily Issue.	Copies per 1000 Inhab.
United Kingdom .		169	8,200,000	89
France		128 ·	2,300,000	60
Germany		560	2,500,000	54
Italy		105	600,000	21
Belgium and Holland		94	400,000	87
Spain, Russia, &c		250	600,000	5
				_
Europe		1,306	9,600,000	80
United States .		962	3,600,000	70
Spanish America .		115	400,000	13
India, Colonies, &c.		162	700,000	3
				_
The World .	•	2,545	14,300,000	22
C.—Press	)F	UNITED	Kingdom.	
		Dailies.	Weeklier, &c.	Total.
London		15	360	375
Provinces		116	987	1,103
Scotland		22	161	183
Ireland		16	140	156
United Kingdom	•	169	1,648	1,817

PRESS.

### D.—Growth of Newspapers since 1840.

	No. of	Papers,	No. of	News-	Date of
	1840.	1882.	in 1882.	papers per Town,	First Paper A.D.
United Kingdom	493	1,817	120	15	1622
France	776	1,230	91	14	1605
Germany	805	2,350	114	21	1524
Russia	204	436	88	5	1714
Austria	182	865	87	23	1550
Italy	210	1,124	76	15	1562
Spain	74	258	28	9	1704
Portugal	18	42	8	14	•••
Belgium	52	412	24	17	1764
Holland	26	210	19	11	1757
Scandinavia .	104	230	13	18	1644
Switzerland .	54	434	6	72	•••
Funenc	2,448	9.408	619	15	1524
Europe United States .	830		102	101	1704
Spanish America	88	11,052 870	74	12	1728
Brazil	11	296	20	15	1780
Australia	43	270	20 16	17	1803
Canada	88	565	9	62	1765
India	63	644	180	4	1781
West Indies .	37	60	100	6	1731
Sandwich Islands	1	6	10	6	1835
Africa	14	62	12	5	1824
	1	34	30	1	1024
Japan	14	72	17	4	1797
Turkey, &c	14	12	- 17	-	1,97
Total	3,638	23,339	1,093	21	1524

The Chinese have had newspapers at least ten centuries. In the above table only towns of over 20,000 population are counted. The increase of newspapers in Europe has been as follows:—

Year.	Number.	Per Million Inhab.	Year.	Number.	Per Million Inbah
1828	. 2,142	10.5	1865	. 7,140	26.4
1840	. 2,448	10.7	1882	. 9,408	31-2

### E.—British Press since 1800.

	Millie	on Pape	rs per A	nnum.	Annual Issue per 100 Inhabi- tants, Copies.			
	1801.	1831.	1864.	1882.	1801.	1831.	1864.	1832
England	16	33	482	1,350	180	230	2,250	5,120
Ireland	2	4	36	130	38	. 52	640	2 540
Scotland	1	2	28	140	60	84	950	3,760
U. Kingdom	19	39	546	1,620	122	164	1,810	4,450



#### PRESS.

### 369

### F .- French Daily Press.

			7	bousands Daily.	Copies per 1000 Inhab.
Paris .				1,470	<b>63</b> 0
Lyons . Marseilles				73	190
Marseilles				70	194
Bordeaux				40	188
Other towns	•	•	•	647	•••
France				2,300	60

### G .- United States Daily Press.

States.	No. of	No. of Papers.		housands.	Copies per 1000 Inhabitants.		
	1870.	1880.	1870.	1880.	1870.	1880.	
New England	60	84	310	403	89	101	
Middle	171	259	1,369	1,799	140	146	
Southern	82	122	146	174	12	12	
Western	206	381	683	970	49	55	
Pacific	55	116	143	246	186	195	
Total	574	962	2,601	3,592	69	71	

### H-LITERATURE: NEWSPAPERS AND BOOKS.

		Pe	er Annum.	
	Paper, Tons Used,	Lbs. per luhab,	Expenditure, Books and Papers.	Average per Inhab. Pence.
United Kingdom	95,000	6.1	£16,060,000	107
France	70,000	4.2	11,750,000	75
Germany	76,000	3.7	12,720,000	67
Russia	18,000	0.5	8,040,000	9
Austria	24,000	1.4	4,050,000	25
Italy	19,000	1.5	3,200,000	26
Spain	6,000	0∙8	1,010,000	15
Portugal	2,000	1.0	340,000	18
Belgium	8,000	3.3	1,350,000	59
Holland	3,600	2·1	610,000	38
Scandinavia .	6,000	1.5	1,010,000	30
Switzerland .	4,000	3.3	670,000	58
Europe	331,600	2.4	£55,810,000	44
United States .	107,000	4.7	18,080,000	76
Canada	4,000	2.2	670,000	39
Australia	4,000	3.3	670,000	58
Spanish America	10,000	0.7	1,680,000	14
India, &c	4,400	•••	740,000	•••
The World .	461 000		£77,650,000	

2 A

#### PRICES.

## A.—ROMAN EMPIRE, A.D. 303. Prices in Realish Pence and Realish Measure.

	P	ric	es in L	Inglish Pence and	Engli	sk Measure.	
Wines, &c.			Per Pint.	Meat, &c.	Per Lb.	Game.	Per Head
Falernian .			15	Beef		Grouse	15
Sorrento .			15	Mutton		Dove	12
Sabine			15	Lamb	6	Pigeon	18
Ordinary .			10	Pork	6	Wood do	15
Inferior .				Ham	10	Partridge	24
Rustic			4	Sausages	4	Duck	
Vinegar .			3	Venison		Rabbit	80
Beer			2	Boar	9	Fowl	45
Small do			1	Sea fish	14	Goose	
Oil, 1st .			20	River fish		Fat do	
Do., 2nd .				Salted ,		Pheasant	80
Do., 8rd .			6	Snails, dozen .	ī	Hare	
			Per		Per	Clothing, &c.	Pence
Groceries.			Per   Lb.	Vegetables, &c.	Per 20.		Pence 3
Tallow .			Lb. 3	Vegetables, &c. Apples	20. 2	Socks	8
Tallow . Cheese .			Lb. 3 7	Vegetables, &c. Apples	20. 2	Socks Tunic	8 12
Tallow .			Lb. 3 7	Vegetables, &c. Apples Cherries	20. 2 1	Socks Tunic Breeches	8 12 15
Tallow . Cheese . Butter . Lard .	<i>.</i>	:	Lb. 3 7 9	Vegetables, &c. Apples	20. 2 1	Socks Tunic	3 12 15 30
Tallow . Cheese . Butter . Lard .	<i>.</i>	:	Lb. 3 7 9	Vegetables, &c. Apples Cherries Almonds Walnuts Chestnuts	20. 2 1 1 1	Socks Tunic Breeches Cloak Boots	3 12 15 30 100
Tallow . Cheese . Butter .	:	•	Lb. 3 7 9 9	Vegetables, &c. Apples Cherries . , Almonds Walnuts	20. 2 1 1 1	Socks Tunic Breeches Cloak Boots Shoes	3 12 15 30 100 120
Tallow . Cheese . Butter . Lard . Honey .		: : : : :	Lb. 3 7 9 9 12	Vegetables, &c. Apples Cherries Almonds Walnuts Chestnuts	20. 2 1 1 1 1	Socks Tunic Breeches Boots Shoes Slippers	3 12 15 30 100 120 50
Tallow . Cheese . Butter . Lard . Honey . Beans . Peas .		: : : : : : : : : : : : : : : : : : : :	Lb. 7 9 9 12 5	Vegetables, &c. Apples Cherries Almonds Walnuts . Chestnuts . Onions	20. 2 1 1 1	Socks Tunic Breeches	3 12 15 30 100 120 50 40
Tallow . Cheese . Butter . Lard . Honey . Beans . Peas . Lentils .			Lb. 3 7 9 9 12 5 3	Vegetables, &c. Apples Cherries Almonds . Walnuts . Chestauts . Onions Turnips	20. 2 1 1 1 4 8	Socks Tunic Breeches Cloak . Boots Shoes Slippers Clogs	3 12 15 30 100 120 50 40
Tallow . Cheese . Butter . Lard Honey . Beans . Peas Lentils . 20 eggs .			Lb. 3 7 9 9 12 5 3 5	Vegetables, &c. Apples Cherries . Almonds Walnuts . Chestnuts . Onions Turnips . Cucumbers .	20. 2 1 1 1 4 8	Socks Tunic	3 12 15 30 100 120 50 40 400 80
Tallow . Cheese . Butter . Lard Honey . Beans . Peas . Lentils . 20 eggs . 20 oysters		· · · · · · · · · · ·	Lb. 3 7 9 9 12 5 3 5 15 15 2	Vegetables, &c. Apples Cherries Almonds Walnuts Chestnuts Onions Turnips Cucumbers .	20. 2 1 1 1 4 8 8 15	Socks Tunic	3 12 15 30 100 120 50 40 400 80 12
Tallow . Cheese . Butter . Lard . Honey . Beans . Peas . Lentils . 20 eggs . 20 oysters . 20 figs .		• • • • • • • • • • • • • • • • • • • •	Lb. 3 7 9 9 12 5 3 5 15 15	Vegetables, &c. Apples Cherries Almonds Walnuts Chestnuts . Onions Turnips Cucumbers . Lettuce . Cauliflowers .	20. 2 1 1 1 4 8 8 15	Socks Tunic	3 12 15 30 100 120 50 40 400 80 12

#### B.—Prices in England since a.d. 1201.

			Nominal, in Current Coin, Centuries.								
		13th.	14th.	15th.	16th.	17tb.	18th.	19th.			
Ox		13s.	16s.	20s.	31s.	100s.	160s.	280s.			
Sheep .		1s.	1 1 8.	28.	38.	78.	18a.	254			
Pig		2s.	3s.	3a,	48.	8s.	22s.	30s.			
Wine, gallon .		1s.	1s.	la.	38.	5s.	16e.	20s.			
Beer, "		1d.	2d.	2d.	3d.	4d.	8d.	184.			
Goose		3d.	4d.	6d.	8d.	12d.	24d.	50d.			
Rabbit		2d.	2d.	3d.	3d.	6d.	8d.	12d.			
Hen		1d.	2d.	3d.	4d.	8d.	12d.	18d.			
Pigeons, dozen	.	3d.	4d.	6d.	9d.	12d.	18d.	36d.			
Beef, 8 lbs		2d.	4d.	5d.	6d.	24d.	36d.	64dL			
Eggs, dozen .		1d.	2d.	3d.	3d.	4d.	8d.	12d.			
Butter, lb.			1 ½ d.	1 jd.	2d.	4d.	5 <b>d</b> .	12d.			
Wheat, quarter			6я.	68.	16s.	42s.	50a	56a			
Horse	!	1		£2	£3	£5	£13	£22			



#### PRICES.

## PRICES IN ENGLAND SINCE A.D. 1201—continued. Actual Price in Weight of Silver.

Ox	•	. 1	43s.	45s.	428.	40s.	106s.	170s.	280s.
Cow .			80s.	85s.	30s.	30s,	80s.	100s.	200s.
Horse .					84s.	80s.	106s.	275s.	440s.
Sheep .			8s.	418.	48.	48.	- 8s.	19s,	25s.
Pig			6s.	98.	6s.	6s.	9s.	23s,	30s.
Wheat, quart	er		•••	168.	12s.	21s.	458.	53s.	56s.
Wine, gallon			8s.	3s.	2s.	48.	6s.	178.	20s.
Beer, ,,			3d.	5d.	4d.	4d.	4d.	8d.	18d.
Goose .			9d.	12d.	12d.	11d.	12d.	25d.	50d.
Rabbit .			6d.	6d.	6d.	4d.	6d.	8d.	12d.
Hen .		٠.	`3d.	6d.	6d.	5d.	9d.	12d.	18d.
Pigeons, doze	n		9d.	12d.	12d.	12d.	13d.	18d.	36d.
Beef, 8 lbs.			6d.	12d.	10d.	8d.	25d.	38d.	64d.
Butter, lb.				4d.	3d.	3d.	4d.	5d.	12d.
Eggs, dozen	•	•	3d.	6d.	6d.	4d.	4d.	8d.	12d.

#### C .- RISE OF PRICES IN ENGLAND (RATIO OF VALUE).

	Not	ninal Va	lue.	Coined	Value in Silver.			
A.D.	Grain.	Cattle.	Labour.	Silver, per Lb.	Grain.	Cattle.	Labour.	
1201-1300	10	5	15	20s.	33	16	50.	
1301-1400	11	7	20	23s.	32	20	57	
1401-1500	11	9	22	32s.	23	19	45	
1501-1600	32	18	22	52s.	41	16	29	
1601-1700	80	30	33	62s.	85	32	35	
1701-1765	70	45	40	62s.	74	48	43	
1766-1810	106	53	55	625.	112	56	58	
1811-1848	121	70	70	66s.	121	70	70	
1880-1883	100	100	100	66s.	100	100	100	

The foregoing shows that cattle, for example, sell to-day at 20 times the nominal price, but only 6 times the weight in silver, which they were worth in the 13th century. Shuckburgh's table (1800) was manifestly erroneous, since prices had nominally increased only 7-fold from 1200 to 1800.

		Ratio of V	alue.		
A.D.	Ń	ominal.	Real.	Shuckburgh.	Rise of Eng. Population.
1201-1300		10	33	11	. 8
1301-1400		13	37	14	9
1401-1500		14	29	16	14
1501-1600		22	29	20	18
1601-1700		48	51	35	21
1701-1765		52	55	58	24
1 <b>766</b> –1810		71	75	100	35
1880-1883		100	100	•••	100

#### D.—Prices in England from 1780 to 1850.

Ratio. 1780-1800. 1801-20. 1780-1800. 1821-50. 1821-50. Wheat, qr. 100 56s. 102 86s. 57s. Butter, cwt. 63s. 90s. 78s. 100 124 65s. 57s. Beef 47s. 100 121 ,, Sugar 46s. 85s. 100 83 42s. ,, Iron 18s. 12s. 6s. 100 83 ,, Coffee 112s. 126s. 90s. 89 100 ,, Cotton 178s. 1498. 70s. 100 89 ,, 100 Wool 140s. 110s. 210s. 79 ,, Tea, lb. 42d. 38d. 24d. 100 57 Total 900 727

#### E. AND F.—PRICE-LEVELS OF THE WORLD FOR 100 YEARS.

#### Agricultural. Grain. Total. | Years. Meat. Dairy. Wool. Cotton. Sugar. 100 1782-90 100 100 100 100 100 100 1791-1800 141 188 121 170 132 133 131 110 1801-10 1811-20 259 138 165 167 75 166 208 172 113 175 190 206 75 165 1821-30 118 157 173 153 90 46 41 113 144 155 175 110 1831-40 75 110 109 105 60 54 26 28 102 1841-50 110 165 118 123 1851-60 128 184 104 194 123 1861-70 61 198 46 110 1871-80 36 119 115 220 218 34 88 64 1881-84 98 244 222 30 29 113

#### Industrial.

Years.	Hardware.	Timber.	Coal,	Cottons.	Woollens.	Leather.	Total.
1782-90	. 100	100	100	100	100	100	100
1791-180	0 124	138	109	107	112	128	116
1801-10	. 159	263	85	82	199	173	138
<b>1</b> 811- <b>20</b>	. 181	<b>2</b> 38	91	82	161	168	136
1821-30	. 144	108	91	58	92	90	95
1831-40	. 124	127	71	54	84	100	87
1841-50	. 82	182	57	42	73	111	75
1851-60	. 75	144	61	36	68	103	69
1861-70	. 72	144	61	<b>52</b>	78	108	75
1871-80	. 85	128	61	37	75	96	70
1881-84	. 55	116	48	32	62	94	57

It appears from the above that agricultural products have risen 13 per cent., manufactures fallen 43 per cent., in pricelevel since 1782-90.



PRICES.

### G.—PRICES IN ENGLAND SINCE 1854.

						1000	Rat	io.
		185	4-60.	1861-70.	1871-80.	1881.	1854-60.	1881.
Bacon, cwt		8.	51	49	45	46	100	90
Barley, bushel		d.		43	50	50	100	135
Butter, cwt	- 3	8.		104	110	106	100	126
Carpets, yard .		d.		35	35	29	100	98
eur .		8.		56	56	57	100	11:
CH . 1		d.	36	36	37	33	100	9
		d.		118	149	108	100	9
		S.	49	64	88	77	100	15
Cotton, raw .		8.	61	148	66	58	100	9
Cotton cloth, 10	O rela	d.		42	80	27	100	9
Eggs, 12 dozen		d.		88	114	106	100	12
		d.		19	18	15	100	9
Flannel, yard . Flax, cwt			47	55	49	41	100	8
244		8.		55	54	44	100	7
Glass ,, .		S.	62	27	28	35	100	13
Herrings, barre		8.	26 66	59	82	86	100	13
Hides, cwt		8.						
Horses, each .		£	56	52	64	62	100	11
Iron, ton		8.	66	59	74	55	100	8
Jute, cwt		8,	18	19	17	16	100	8
Lard " .		8.	58	56	47	51	100	8
Lead, ton .		£	22	21	21	16	100	7
Leather, cwt		8.	176	185	164	161	100	9
Linen, 100 yard		d.	73	76	73	70	100	9
Oats, bushel .		d.	35	40	46	44		12
Oil, tun		£	53	58	46	41	100	8
Oranges, bushe	1 .	8.	12	11	9	8	100	6
Oxen, each .		£	16	18	21	22	100	13
		8.		63	49	45	100	5
Potatoes, " .		d.	50	67	66	65	100	13
Rice "		В.	12	12	10	9	100	7
Salt, ton		1	130	126	158	140		10
Sheep, each .		8.	41	39	45	47	100	11
Silk, lb		8.	18	23	19	17	100	9
Soap, cwt		8.	24	26	25	22	100	9
Spirits, gallon .		d.	45	31	49	67	100	14
Steel, ton .	14	£	35	33	32	11	100	3.
Sugar, cwt		8,	32	33	26	24	100	7.
Tallow , .	a 4	8,	55	45	40	35	100	6
Tea, lb	1.	d.	17	18	16	13	100	7
Tobacco, cwt		8,	91	104	73	64	100	7
Wheat, bushel.		d.	81	78	71	66	100	8
Wine, gallon .		d.	133	67	88	71	100	5
Wood, load .		8.	64	63	56	51	100	8
Wool, lb		d.	21	18	14	14	100	6
Total							4,400	4,19

PRICES.

### H.—PRICES (ENGLAND).

		1						Ratio.	
				1861.	1873.	1882.	1861.	1873.	1882.
Alkali		_	8.	8.52	12:32	6.14	100	145	72
Beer .			8.	74.58	82.81	85.20	100	110	114
Books	•		£	14.43	10.88	9.62	100	76	67
Boots.			8.	73.11	6473	58.70	100	89	80
Bottles	:	:	8.	10.16	10.18	9.55	100	100	94
Butter	:	:	8.	96-25	113.14	138-88	100	117	144
Candles		:	8.	11.87	8-04	6.49	100	67	55
Carpets	•	:		30-01	88.64	28.14	100	129	94
Cheese	•	:		82.32	86.30	81-06	100	105	99
Cloth.	•	:	ā.	29.53	41.00	34.19	100	137	114
Coals.	•	:	8.	9.19	20.90	9.14	100	227	99
Copper	•	:	£	4-96	4.88	3.57	100	98	79
Cordage	•	:	8.	48.39	59.70	52.26	100	124	108
Cottons,	•	•	d.	3.02	3.45	271	100	115	90
•	rinte		d.	4.11	4.78	374	100	117	91
•	ixed		d.	7.10	9.29	5.84	100	131	82
", n Fish .	IIACU		8.	28:20	28.38	29.90	100	101	106
Flannel	•	•	d.	18.47	18.10	15.14	100	98	8:
Firearms	•	•	8.	32.67	29.13	28-20	100	90	87
		•		55.18	57.88	47.50	100	105	86
Glass, flin		•	8.	2.67	3 01	1.53	100	112	55
g,, pla		•	8.						
Gunpowd	er	•	d.	7.40	6.38	6.03	100	86	81
Hats .	•	•	8.	36.35	29.46	21.86	100	82	60
Horses	•	•	£	80.51	62.95	63.24	100	78	79
Iron rails	•	٠	£	7.70	13.27	6.83	100	172	89
_" pig	•	•	8.	51.77	124.65	56.44	100	240	109
Jute .	•	•	d.	4.68	3.98	2.70	100	85	57
Lead .		•	£	21.65	23.75	15.45	100	110	72
Leather	•	•	8.	8.99	9.00	8.74	100	100	97
Linen		•	d.	7.16	7.62	6.90	100	107	97
	ited			9.87	7.63	8.11	100	77	8:
Paper			£	3.96	3.04	2.23	100	75	5€
Salt.	•		8.	10.53	18.77	11.90	100	179	113
Silk .			8.	3.14	3.54	3.37	100	112	107
Soap.			8.	24.71	26.45	22.40	100	106	90
Spirits			8.	2.37	2.50	5.87	100	106	244
Steel .			£	<b>3</b> 3·3 <b>3</b>	37.11	11.80	100	111	35
Sugar			8.	49.24	30.02	23.30	100	61	48
Tin .			£	6.07	6.83	5.24	100	113	86
Wool.				17:46	21.18	15.20	100	121	87
Yarn, cot	ton		a.	12.54	17.76	12.96	100	142	104
,, line			d.	13.91	16.51	13.71	100	117	ğ
	ollen	:		30.13	37 26	25.62	100	124	8.
Zinc .	•	:	£	21.83	24.92	14.67	100	114	67
Total					·		4,400	5,001	3,937



#### PRICES.

### I.—PRICES IN UNITED STATES (IN ENGLISH GOLD).

	1825-80.	1881-40.	1841-50.	1851 <b>–60</b> .	1861-70.	1871-80
Coal, ton	 s. 33	84	25	25	26	19
Iron ".	 s. 218	187	133	121	122	131
Wheat, bushel	 d. 55	68	58	79	75	65
Maize "	 d. 80	40	32	40	88	28
Pork lb.	 d. 8·18	4.26	2.70	4.25	4.32	3 68
Sugar "	 d. 3.75	3.40	8.10	8.11	4.20	3.52
Flour "	 d. 1.38	1.74	1.39	1.50	1.31	1.27
Dias	 d. 1.56	1.80	2.28	2.04	8.51	8.42
Trial	 d. 1.38	2.16	2.76	3.96	8.65	8.17
Tobacco ,,	 d. 2.01	3.62	2.89	4.60	6.15	4.82
Wasi	 d. 18.51	16.48	13.50	17.52	18.84	19.38
Coffee	 d. 7.0	5.8	3.9	5.2	7.7	8.3
Cotton "	d. 6.0	6.2	4.2	5.3	18.2	7.0
Doof "	 d. 2.3	2.7	2.3	2.5	2.3	2.3
Uama "	 d. 5·0	5.2	37	4.9	4.8	4.5
Rutten	 d. 7.5	8.6	6.6	9.6	11.4	11-2
Cheese ,	 d. 3.6	4.0	3.1	4.1	4.9	5.5
Leather ,,	 d. 10.5	9.6	7-9	10-9	11.2	12.5

### K .- PRICES IN FRANCE (ENGLISH MONEY).

	140	0-99.	1500-99.	1600-99.	1701 <b>-9</b> 0.	1820-30.	1850-60.	1870-80.
Wheat, qr	8.	5	7	18	26	44	52	53
Wine, gallon.	d.	4	8	12	15	18	25	22
Eggs, dozen	d.	2	2	3	8	4	6	9
Meat lb	d.	•••	2	8	8	4	6	8
Butter "	d.	•••	3	4	6	7	10	14
Sugar "	d.	••.	<b> </b>	6	8	11	8	5
Potatoes, cwt.	d.	•••		<b></b>		24	46	70

### L.—PRICES OF FOOD IN 1878.

	Eng	land.	France.	Germany.	Italy.	N. York.	Chicago.
Beef, lb	d.	10	9.5	9.0	8.0	6.0	4.0
Bread "	d,	2	1.6	2.0	3.0	2.0	2.0
Butter "	d.	17	13	11	14	14	12
Eggs, dozen .	d.	11	9	10	9	14	9
Milk, quart .	d.	4	l	2	4	5	3
Sugar, lb	d.	4	5	5	4	5	5
Coffee "	d.	15	15	17	16	13	14
Rice "	d.	8		4	3	5	5
Pork "	d.	7	7	8	7	5	8
Potatoes, cwt.	8.	6	4	4	8	11	6

#### PRISONS.

A.—Prison Population of	GREAT	BRITAIN	(1880).
-------------------------	-------	---------	---------

Males . Females .	:	:	23,	and. 791 533	2,	tland. 063 ,008	Great Britain. 25,854 5,541	
Total .	•		28	,324	3	,071	31,395	
	,	Per 1	00,00	0 In	habitant <b>s</b>			
Males .					189	114	179	
Females					34	52	36	
General	. •	•	•	•	109	83	105	

In England there are 84 male to 16 female offenders, in Scotland 67 of the former to 33 of the latter.

### B.—Persons Committed to Prison.

#### Annual Average per 100,000 Inhabitants.

Period.	England.	Scotland.	Ireland.	United Kingdom.
1840-49 .	164	149	302	204
1850- <b>59</b> .	126	130	227	151
1860-69 .	91	104	91	92
1870-79 .	64	89	84	69

For other countries, see Crime.

#### PROSTITUTION.

	1	Prostitutes.	Per 10,000 Inhab.		P	rostitutes.	Per 10,000 Inhab.
London		31,800	83	Lyons .		5,520	145
Paris .		26,990	122	Marseilles		4,080	112
Berlin .		27,300	248	Bordeaux		2,610	125

**PROTECTION.**—The absurdity of protection is manifested in the United States: inferior native ironstone costs (1882) 42 shillings per ton at Pittsburg, while the best Bilbao ores can be delivered in New York harbour at 12 shillings per ton. See *Bounties*.

**PRUDHOMMES.**—A kind of arbitration-tribunal for disputes between employers and workmen: cases heard annually average 42,600 in France, and 4,100 in Belgium.

#### PUBLIC PROPERTIES IN FRANCE (1882).

Summary. Millions £ State forests . 50 Royal palaces . 12 Fortifications . 29 Buildings, &c 42	Palaces, Value, &c. Thousands. Versailles . £4,444 Fontainebleau 2,202 Louvre, &c 5,150	Paris. Churches Schools. Parks Various	Value, Thousands, £7,188 . 4,280 . 10,890 . 20,027
Total 133	Total . £11,796	Total	£42.385

The Church of St. Roch, Paris, is valued at £660,000; the Madeleine at £460,000.

#### PUBLIC WORKS. ?

	İ	Value in Millions £.						
	Roads and Canuls,	Streets, Drains, &c.	Public Buildings.	Fortif. Arsenals, &c.	Total.	Ratio per Inhab.		
U. Kingdom .	162	68	114	203	547	£15		
France	297	34	95	164	590	16		
Germany	210	87	73	122	442	10		
Russia	76	26	44	78	224	8		
Austria	80	13	39	56	188	5		
Italy	22	23	33	53	131	41		
Spain	10	10	17	23	60	4		
Portugal	2	2	4	7	15	4		
Belgium		8	7	16	41	8		
Holland	23	6	6	90	125	31		
Denmark	8	2	2	4	11	6		
Sweden	18	2	3	9	32	7		
Norway	7	1	1	4	13	7		
Switzerland .	14	8	4	9	80	11		
Greece	2	1	2	2	7	4		
Europe	936	236	444	840	2,456	£8		
United States .	174	46	139	168	527	10		
Canada	11	3	6	10	30	7		
Mexico	3	2	5	2	12	1		
Argent. Repub	1	1	2	2	6	8		
Australia	8	4	6	10	28	10		
Total	1,133	292	602	1,032	3,059	£8		

#### PUBLIC WORKS LOANS.

#### From 1817 to 1881.

Advances Repaid Bad debts	:	Great Britain. £44,743,000 16,768,520 1,948,000	Ireland. £31,800,000 18,000,000 7,714,000	Total. £76,543,000 84,768,520 9,662,000
Balance	due	£26,026,480	£6,086,000	£32,112,480

#### PUBLIC WORKS (UNITED STATES).

### A.—Expenditure from 1789 to 1879.

#### Millions £.

Buildings		24	Harbours and	anals	16
Lighthouses		5	Roads, &c		22
Arsenals	•	15	Fortifications.		11
	Total		£93,000,000.		

The above represents only the subsidies granted by Congress, a small part of the total outlay.

#### B.—DISTRIBUTION OF EXPENDITURE.

States.			:	Millior &.	28	States.			)	lillions £
New Engl	and	•	•	9		Southern	•			16
Middle	•	•	•	28	ı	Western	•	•	•	40
		Tota	d			£93,000,0	00.			

**PULSE.**—The number of pulsations per minute is 120 in infancy, 80 in manhood, 60 in old age, and rather more in women than in men.

#### PUMPS.

Work.		Million Tons Water.	No. of Days.	Gallons per Pump per Hour.
Zegedin .		36	70	90,000
Severn tunnel	•	•••	•••	125,000

The draining of Haarlem lake, which took 13 years, could now be done in 22 months by means of 100 of the new pumps patented in England in March 1882. The proposal to pump out the Zuyder Zee, with 500 pumps, at a cost of £10,500,000, in a period of 2 years, is based on this table:—

		Square Miles,	Depth, Feet.	Million Tons Water.
Haarlem		90	15	990
Zuyder Zee		600	12	5,400

The site of Haarlem lake sold for £16 an acre, but the Zuyder Zee must realise £26 per acre to cover expenses.

To pump out Lough Neagh, in Ireland, which contains

To pump out Lough Neagh, in Ireland, which contains 4800 million tons of water, would cost fully as much as the Zuyder Zee, and the land reclaimed should sell for £100 an acre to pay expenses. See Windmills.

PYRAMIDS.—The largest, that of Cheops, has a base equal to the area of Leicester Square, London, and a height of 452 feet. It is composed of 4 million tons of stone, and occupied 100,000 men during 20 years, equal to an outlay of 40 millions sterling. It would now cost 4 millions sterling, at the contract price of 18 pence per cubic foot.



#### QUAKERS-RAILWAYS.

### Q

### QUAKERS.

A	-Av	ERAGE	DURATION	OF	LIFE.

1847-50		52	- 1	1867-70		52
1857-60	•	53	-	1879-82	•	58

#### B.—QUAKERS AND GENERAL POPULATION.

-		Quakers.	General Population.
Deaths, per 1000 .		18	· 22
Insane, per 10,000 .		38	28
Charities per inhabitant	•	32s.	6s.

The total number in the United Kingdom is 17,960, who have 10 representatives in the House of Commons, whereas  $1\frac{1}{2}$  million Roman Catholics in Great Britain have but one co-religionist in that house.

QUININE. See Chinchona.

#### $\mathbf{R}$

RARRITE	•

			sumption,	Rabbits, per 100 Inhab.
England			<b>2</b> Ò	77
France .	_	_	70	186

One pair of rabbits can become multiplied in 4 years into 1,250,000. They were introduced into Australia a few years ago, and now that colony ships 6 million rabbit skins yearly to England.

#### RAILWAYS.

#### A.—SUMMARY.

	Construc-	000	l	Annual Average.			
Period.	tion, Miles.	Cost, Millions £.	Cost per Mile, £.	Miles Opened.	Cost, Millions &.		
1825-40 .	5,231	114	21,800	360	8		
1840-50 .	19,259	327	17,100	1,930	83		
1850-60 .	42,580	538	12,700	4,260	54		
1860-70 .	63,100	1,098	17,400	6,310	110		
1870–82	120,022	2,263	18,900	10,000	190		
Total .	250,192	4,340	17,300	5,320	93		

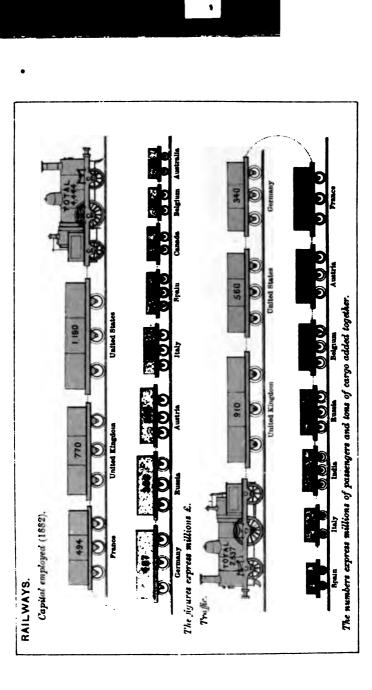
### B.—Four Decades of Railways.

		Miles Open.					Cost, Millions &.			
	1850,	1860.	1870.	1880.	1850.	1860.	1870.	1880.		
U. Kingdom	6,621	10,433	15,537	17,945	240	348	530	729		
Continent .	8,311	21,815	49,320	86,818	134	356	890	1,788		
U. States	9,020	30,593	52,974	93,671	60	225	480	1,041		
Canada, &c	538	4,228	12,339	31,804	7	50	177	413		
Total .	24,490	67,069	130,170	230,238	435	979	2,077	3,971		

### C.—Traffic in 1882.

	Milli	ions.	Receipts.	Working	Earnings	Divid.
	Pas- sengers.	Goods, Tons.	Thousands Omitted.	Expenses, per Cent.		on Capital
United Kingdom	752	256	£69,400	52.0	£3,772	4.20
France	180	90	42,800	52.2	2,520	4.12
Germany	210	157	47,300	54.0	2,062	4-21
Russia	38	35	22,200	70.0	1,547	2.20
Austria	44	57	23,200	56.8	1,860	3.76
Italy	34	10	6,600	61.5	1,270	2.48
Spain	24	6	5,300	47.2	1,178	3.78
Portugal	4	1	700	57.1	902	2:55
Belgium	56	36	5,400	59.2	2,020	3.66
Holland	17	6	1,800	50.0	1,283	3.46
Denmark	6	1	700	71.4	740	2.10
Swed. and Nor	9	7	2,200	68.2	505	2.42
Switzerland	22	6	2,300	56.5	1,402	3.03
Turkey, &c	1	•••	500	66.5	900	2.17
Europe	1,397	668	£230,400	55.4	£2,070	3.80
United States .	270	290	136,300	62.2	1,444	4.80
Canada	11	10	5,600	77.6	790	1.86
Spanish America	8	3	6,700	66.0	880	2.05
Australia	4	4	4,400	61.2	1,010	3.60
India	48	9	12,100	51-2	1,330	4.55
Egypt, &c	4	1	3,300	68.0	960	
The World .	1,742	985	£398,800	57:3	£1,610	4.10

The above includes 15 per cent. extra in United Kingdom for season-tickets.









#### RAILWAYS.

### 381

### D.—Railways in Countries.

		Miles Ope	n.	Miles p	er 100,00	0 Inhab
	1840.	1860.	1882.	1840,	1860.	1882.
United Kingdom .	838	10,433	18,405	3	36	52
France	265	5,863	17,006	1	15	46
Germany	291	6,887	22,160	1	19	49
Russia	16	937	15,070		1	16
Austria	295	3,205	12,330	ï	10	33
Italy	***	1,118	5,550		5	20
Spain and Portugal		1,066	5,610		5	27
Belgium and Holl.	207	1,294	4,110	3	15	40
Scandinavia		731	5,652	1445	10	63
Switzerland		681	1,640	1000	27	60
Turkey, &c	***	41	1,860			***
Europe	1,912	32,256	109,393	1	12	34
United States .	3,319	30,593	104,810	20	100	210
Canada	***	2,173	7,450		63	178
Spanish America .	***	365	8,540	***	1	28
Australia	500	165	5,390	***	13	190
India		841	10,790			6
Egypt		275	1,215	***	10	24
Other countries .		401	2,784	***	***	
Total	5,231	67,069	250,372	144		

#### E.—Accidents on Railways.

	Kill	led.	Woun	ded.	'	Per
	Passen- gera,	Others.	Passen- gers.	Others.	Total.	Million Passen- gers.
U. Kingdom	29	1,106	904	8,055	5.094	8.1
France .	34	327	410	1,813	2,584	15.8
Commens	26	494	81	1,950	2,551	12-2
Danada	20	395	62	668	1,145	29.2
Austria .	. 3	218	22	843	586	13.5
Tealse	9	170	52	636	867	28.4
gnain.	22	80	130	124	356	14.8
Tralland	4	25	9	29	67	4.4
Belgium .	6	169	74	380	629	117
Scandinavia .	. 2	31	4	37	74	50
Switzerland	. 7	34	16	62	119	5.4
Europe .	162	3,049	1,764	9,097	14,072	10.8
United States	2,5	349	5,8	66	8,215	41.1
Total .	. 5,5	560	16,7	27	22,287	14.8

#### F.—RAILS, EMPLOYÉS AND LOCOMOTIVES.

	Thou	Tons, isauds itted.	Employ	yéa.	Max. Speed, Miles	Locomo-	Tons Rail per Mile.
	Iron,	Steel.	No.	Per Mile.	per Hour.	No.	
U. Kingdom	1,980	2,410	262,000	15	50	13,480	240
France	1,570	1,715	234,000	14	39	6,220	202
Germany	2,550	1,570	301,000	14	31	10,900	195
Russia	820	920	411		25	3,560	126
Austria	930	700			24	3,600	128
Italy					29	1,860	
Belgium	265	255			24	1	210
Various	2,215	1,620			1111	1,240	150
Europe .	10,330	9,190			50	40,860	182
U. States .	7,200	5,200	463,000	5	40	17,800	118
Various .	3,200	3,100		***		5,900	110
Total .	20,730	17,490			50	64,560	152

The weight of rail varies in England from 28 to 76 lbs. per yard, the tons of rail per mile above stated including double lines. Locomotives cost about £2000, passenger carriages from £200 to £400. The rolling-stock of the world sums up a total of 360 millions sterling.

#### G.—BRITISH RAILWAYS.

	1	England.		Scotland.				
	1860.	1870.	1882.	1860.	1870.	1882.		
Miles	7,583	11,043	13,000	1,486	2,519	2,940		
Capital, mill. £	289	440	635	39	63	98		
Mile, carnings.	£3,090	£3,330	£4,546	£1,990	£1,890	£2,542		
Expenses	1,490	1,650	2,379	905	950	1,270		
Profit per mile .	1,600	1,680	2,167	1,085	940	1,272		

	1	Ireland.		Un	United Kingdom.				
	1860.	1870.	1882.	1860.	1870.	1882.			
Miles	1,364	1,975	2,465	10,433	15,537	18,405			
Capital, mill £	20	27	35	348	530	768			
Mile, earnings .	£1,030	£1,060	£1,147	£2,670	2,810	£3,772			
Expenses	440	550	630	1,270	£1,402	1,966			
Profit per mile .	590	510	517	1,400	1,408	1,506			
		!				<u> </u>			

### RAILWAYS.

### H .- RAILWAY CAPITAL AND PUBLIC WEALTH.

			Amount, Millions £,	Per Mile of Rail- way.	Per Inhab.	National Wealth, Millions	Ratio of Railway Capital, per Cent.
United Kingd	om	. [	770	£41,800	£22	8,720	8.8
France .		. 1	494	27,400	13	8,060	6.1
Germany .		. 1	467	21,100	10	6,320	7.1
Russia .		.	309	20,500	4	4,050	7.7
Austria .		. 1	265	20,700	7	3,920	6.5
Italy .		. 1	108	19,400	4	2,230	4.8
Spain .		.	79	16,400	5	1,570	5.1
Portugal .		. 1	12	15,400	3	360	3.3
Belgium .		.	61	22,500	11	1,180	5.3
Holland .		.	27	18,600	7	1,120	2.4
Denmark .		.	10	10,300	5	354	2.8
Sweden and N	orway	y I	32	6,800	5	738	4.3
Switzerland		.	33	20,000	12	310	10.7
Turkey, &c.			24	13,300	2	720	3.3
Europe .			2,691	£24,100	£8	39,652	6.7
United States			1,190	11,400	23	10,370	11.4
Canada .			72	9,600	17	650	11.1
Australia .	•	3-	56	10,400	20	598	9.3
Total			4,009	£17,400	£10	51,270	7.8

# I.—Traffic and Population Compared. Per Inhabitant.

		Pas	sengers.	Tons Goods		Pas	sengers.	Tons Goods.
United Ki	ngde	om	22	7	Spain .		14	1
France	·		5	21/2	Belgium .		10	7
Germany			5	3	Switzerland		8	2
Russia			j.	1	United States		5	6
Austria			11	1 1	Canada .		3	$2\frac{1}{2}$
Italy .			1 <u>‡</u>	į	Australia.		11	1 1

### K.-United States Railways.

States.		Miles Oper	Cost, Millions &.			
States.	1860.	1870.	1882.	1860.	1870.	1882.
New England .	3,669	4,494	6,150	31	43	64
Middle	6,321	10,964	16,440	68	163	806
Southern	9.516	11,163	15,800	53	64	112
West. and Pacif.	11,286	26,264	66,420	87	290	708
The Union .	30,792	52,885	104,810	239	560	1,190

383

### United States Railways—continued.

### Capital Employed.

<b>.</b>	1	Per Mile.	Per Inhabitant.			
States.	1860.	1870.	1882.	1880.	1870.	1883.
New England .	£8,450	£9,500	£10,400	£10	£12	£16
Middle	10,800	14,800	18,300	8	16	23
Southern	5,600	5,700	7,100	5	6	7
Western	7,700	11,060	10,700	9	21	35
Total	8,100	10,600	11,330	8	14	23

## The increase of railways and farms in some of the Western and other States from 1871 to 1880 is shown as follows:—

		Railway	ys, Miles.	In- crease		Thousands acres.	In- crease
		1871.	1880.	Cent.	1871.	1880.	Cent.
Illinois		5,904	8,326	41	25,883	31,674	21
Ohio		3,740	6,664	78	21,713	24,529	13
Iowa		3,160	6,113	93	15,542	24,753	61
Texas		865	5,344	520	18,397	36,292	98
Indiana .		3,529	4,765	36	18,120	31,674	7.4
Michigan .		2,116	4,284	102	10,019	13,807	38
Missouri .	.	2,580	4,211	62	21,707	27,879	27
Kansas .		1,760	3,718	111	5,657	21,417	282
Wisconsin		1,725	3,442	99	11,715	15,353	31
Minnesota	.	1,612	3,391	110	6,484	13,403	106
Nebraska .		943	2,310	146	2,074	9,945	380
11 States		27,934	52,568	88	157,311	250,726	60

#### L.—Construction of Union Pacific.

Miles	Mountains.	Plains, 533	Diversified. 944	Total. 1.777
Subsidy	£2,970,000	£1.760.000	£6,240,000	£10,970,000
Company stock	7,800,000	4,000,000	16,030,000	27,830,000
Total cost .	10,770,000	5,760,000	22,270,000	38,800,000
Cost per mile .	35,900	10,800	23,400	21,960

The charter was signed by President Lincoln in July 1862, and the first train left Chicago for San Francisco on May 1, 1869. Besides a subsidy of £10,970,000, the Company received a land-grant of 23 million acres in alternate lots. 20 miles deep on either side of the line, say 34,000 square miles.



#### RAILWAYS.

### M.—France, Traffic of 40 Years.

	Annual Average.							
Years.	Millions.			Working	Pence per Mile.			
••••	Pas- sengers.	Tons Goods.	Receipts, per Mile.	Expenses, per Cent.	Pas- sengers.	Tons Goods,		
1841-49	10	2	£2,080	54	1.08	1.76		
1850-59	32	11	3,110	44	0.96	1.28		
1860-69	81	33	2,880	46	0.88	1.04		
1870-79	132	56	2,820	50	0.83	0.96		

### N.—Passenger Tariff per 100 Miles (in Pence).

		Class.					
Great Britain	1st. 230	2nd. 160	8rd. 95	Switzerland	1st. 160	2nd. 115	8rd. 81
France	192	144	105	Belgium .	115	85	56
Germany .	154	115	77	Holland .	160	135	77
Russia	182	136	77	Denmark .	155	105	68
Austria	180	135	90	Sweden .	155	105	68
Italy	173	125	85	Norway .	105	68	48
Spain	200	154	95	Turkey	290	230	145
Portugal .	162	125	85	•			

### O.—Passenger Traffic according to Class.

				Percentage of Passengers.						
England				First.	Second.	Third.	Total.			
Scotland	:	:	:	7	6	87	100			
Ireland United Kir	nodo	·		7 6	16 10	77 84	100 100			
France	ng uo		•	8	32	60	100			
Germany India .	:		•	1	13 2	86 97	100 100			

#### P.-HIGHEST RAILWAYS IN THE WORLD.

Line,		Situate	<b>).</b>			Feet.
Lima-Oroya .		Andes				15,840
Mollendo-Titicaca						14,610
Union Pacific .		Rocky I	Moun	tains		8,578
Brenner		Alps				4,450
Mont Cenis .		.,				4,290
St. Gothard .		"				3,780
Zurich-Ensiedeln		"				2,910
	•	••	_	-	-	2 p

#### Q.-RAILWAY TAX.

		·	Amount.	Ratio to Earnings, per Ceut.	Pence per Passenger.
England			£670,000	1.1	0.25
Scotland			60,000	0-9	0-23
France			3,400,000	8.0	5 02
Spain	•	•	330,000	6-2	8.40

### R.—Growth of Railway Traffic.

			Millions.							
			Passengers.			Goods, Tons.				
			1860.	1870.	1882.	1860.	1870.	1862		
United Kingdom		-	187	348	752	82	170	256		
France			54	110	180	22	52	90		
Germany .			48	136	210	24	98	157		
Russia			5	14	88	8	8	85		
Austria .			12	21	44	7	25	57		
Italy			6	24	34	1	6	10		
Spain and Portug	al		5	10	28	2	4	7		
Belgium and Hol	land		19	47	73	8	29	42		
Switzerland .			6	15	22	1	4	6		
Scandinavia.	•		1	8	15	•••	5	8		
Europe .			343	733	1,396	150	401	668		
United States		٠	•••	110	270	•••	150	290		
Total				843	1,666		551	958		

Including 15 per cent. for season-ticket journeys in the United Kingdom.

The preceding table compared with mileage gives the

following results :-

	Pass	engers per	Mile.	Goods, Tons, per Mile.				
	1860.	1870.	1882.	1860.	1870.	1882.		
U. Kingdom .	17,950	22,400	41,100	7,900	10,800	14,200		
France	9,300	10,200	10,600	3,700	4,800	5,500		
Germany	7,020	11,400	9,900	3,500	8,300	7,100		
Russia	4,700	2,100	2,550	2,800	1,200	2,400		
Austria	4,040	3,550	3,670	2,400	4,200	4,800		
Italy	5,800	6,160	6,110	900	1,500	1,900		
Spain and Port.	5,100	2,640	5,320	1,700	1,050	1,400		
Belg. and Holl.	14,900	18,020	17,900	6,600	11,200	10,200		
Switzerland	8,800	16,400	13,750	1,500	4,400	3,900		
Scandinavia	1,340	4,400	3,020	100	2,800	1,640		
Europe	10,600	11,500	12,700	4,820	6,240	5,570		
United States .	***	2,080	2,860		2,950	3,250		



RAINFALL.

387

#### RAINFALL -Annual Average (Inches). 32 | Glasgow Aberdeen 44 | Philadelphia 41 Pittsburg . 91 Adelaide 20 Havana 37 36 21 Prague Armagh Hobart 14 Isle of Man 87 41 Rio Janeiro Baltimore 59 Rome . Bath . 30 Key West . 86 81 35 Rotterdam . 27 St. Bernard . 35 San Francisco 89 Limerick . Lisbon . 23 Bergen Berlin. 24 59 24 | Lisbon . 55 | Liverpool . Bermuda 22 25 St. Helena . 75 London . Bombay 45 30 Madeira 45 Madras 28 28 St. Domingo 44 St. John's, N.B. 30 . 108 Bordeaux . Boston 51 36 St. John's, N.F. . 36 Manchester Brisbane 58 22 St. Louis . 277 St. Petersburg . 23 Sierra Leone . 29 Stockholm . 25 Stockholm . 26 Stockholm . 27 Stockholm . 27 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm . 28 Stockholm 23 | Mannheim . 29 | Maranham Bristol 42 Brussels St. Petersburg 17 76 Marseilles . Calcutta 86 Melbourne . 116 Metz . 44 Milan . 45 Milwaukee . Cambridge . 97 20 Cayenne Charleston . 38 Strasburg . 30 Stuttgart . 27 Cincinnati . 25 45 Milwaukee. 118 Montpelier. 19 Naples 40 New Orleans 13 New York. 30 Nottingham 29 Oxford 37 Palermo 32 Sydney Coimbra 49 • 30 Toronto 51 Toulouse 48 Turin . Copenhagen 28 Cork . 25 Cracow 27 26 Truro . Detroit 44 27 22 Dublin Utah 24 Vera Cruz . **Dumfries** . 183 38 Paris . Washington Edinburgh . 22 41 41 Pekin . 32 Penzance . 47 Perth, W.A. 27 Windermere Florence . 140 York . Geneva 46 23 Genoa. 25 Zurich 34 B.—RAINFALL AND HORSE-POWER. Million Horse-Million Horse-Inches. Horse-power. p Inches, Horseer 1000 power. P er 1000 Inhab. Italy . 31 9 256 8 U. Kingdom 34 283 27 Spain and P. 13 12 France 315 6 305 Germany 25 12 268 Belg. & Hol. 26 2 181 15 72 890 Scandinavia 22 15 Russia 1,660 292 Europe Austria 16 11 . 16 152 450 C.—RAINFALL OF GREAT BRITAIN. Inches. Years. Years. Inches. 1815-24 29.0 1845-54 28.6 1825-34 28·5 28·3 1855-64 26.6 1865-82 . The average rainfall is equal to 630,000 gallons (almost 3000 tons) per acre per annum, of which 2000 tons are required to feed the rivers and crops, and 1000 tons per

acre are lost, being allowed to run off. The above does not include Ireland, where the rainfall averages 35 inches.

### D.—RAINFALL OF LONDON.

<i>D.</i> —	-NAINF.		LON	DOM.		
The average for 70	) years	has be	en :			
Summer half-year Winter ,,		: :	•		12:87 12:03	
Annual rainf	all .		•		24-90	
Taking the above	figures	as dar.	the v	ariation	s of 70	Veati
have been as follows		F,				,
Summer. Winte			FO 60		Winter.	Year.
1813-22 . 97 110 1823-32 . 108 98			58–62 63–72		85 107	95 100
1833-42 . 92 99			73-82		106	108
1843-52 . 95 101						
E.	—Аии	ONIA I	n Rai	n.		
Valentia, Kerry	. 1.00	G	rmany			10.61
Scotland, west coast	. 2.69		ondon			19.17
" mountains	. 2.96		otland			21-29
, east coast	. 5.21		verpoo			29.89
England, east coast	. 5.94		anchest		• •	
" west coast	. 10.55	)   Gi	asgow .	• •		50.58
F.—RAINFALL OF	FENGL	AND, I	и Мо	NTHS (	1815–4	8).
Inches.			Inches.			Inches
			1.96			2.40
	June.					2·67 2·53
	July . August		2·37 2·40	Decemi		2.02
April 173	August		2 10	Decemi	oer	202
4 months 6.60	4 mor		8.56		nths .	9-62
G.—	RAINE	ALL OF	FRAN	CE.		
			Hillion 1		Tons per	
Rainfall		ι	er Ann. 875,0		Second. 11,901	
	•	•		_		
Outflow by Rhone	е.		54,0	00	1,718	
" " Girono			37,0		1,178	
" " Loire	•		31,0		985	
" " Seine	•		22,0		694	
Other rivers .			36,00		1,146	
Absorbed for crop	s, &c.		195,0	Ж	6,180	

France loses nearly half her rainfall, England more than one-third.

. 875,000

11,901

RATES. See Taxes.



#### REFORMATORIES—REINDEER.

#### REFORMATORIES.

	Great 1	Britain.	lre	and.	U. Kin	gdom.	m-4-1
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Total.
Reformatories . Industrial schools		1,070 4,518	973 2,185	235 3,348	5,830 20,572	1,305 7,866	7,135 28,438
Total	23,244	5,588	3,158	3,583	26,402	9,171	35,573

These institutions in 1880 cost for maintenance £596,000, being an average of £16 per child in Great Britain, and £21 in Ireland. The Treasury subvention was 6 pence a day on each child, that is £323,000, the rest being defrayed by donations.

The good effect of Reformatories, since their introduction in 1869, is shown thus:—

Juvenile offenders Per million inhabitants		10,314 458		5,579 215
his gives a dealine of 53	200	cent in	invanila	orimo

This gives a decline of 53 per cent. in juvenile crime. The summary of reformatories for 11 years was:—

Put to trade includes those put to sea.

#### REGISTRY.—Tax on transfer of property in France:—

Year.		Amount, Thousands Omitted.	Pence per Inhab.	Year.		Amount, Thousands Omitted.	Pence per Inhab.
1830		£6,100	46	1860 .		£11,010	70
1840		7,600	53	1871 .		15,020	98
1850		8,140	57	1881 .	•	22,080	140

If these figures be compared with the value of property in France (see *Legacy Returns*, E.), it will appear that the tax has only kept pace with the increase of wealth. Property almost doubled from 1830 to 1860, and again from 1860 to 1880.

#### REINDEER.

Finland			Herds. 2,822	Head of Deer. 44,400	Average. 15
Norway			2,400	101,800	43
Sweden		•-	3,200	220,800	65
					-
Tota	.1		8 492	867 000	44

They can travel with a sleigh 130 miles a day, and are worth usually 30 shillings a head.

#### RELIGION.

# A.—ALL NATIONS. Thousands Omitted.

	2 //(	rusurous Oneuc	· ·		
	Roman Catholic.	Protestant.	Greck.	Jews.	Maho- metaus
United Kingdom	5,336	29,390	•••	51	
France	35,387	581	•••	49	•••
Germany	16,233	28,331	28	512	
Russia	6,780	4,132	57,161	2,298	5,662
Austria	29,430	3,570	2,930	1,670	449
Italy	26,663	59	•••	35	•••
Spain	16,410	11	••.	3	•••
Portugal	4,260	1	•••	•••	•••
Belgium	5,410	- 12	•••	3	•••
Holland	1,440	2,470	•••	83	•••
Denmark	. 2	1,930	•••	4	•••
Sweden and Norw	ay 2	6,365	•••	2	•••
Switzerland .	1,161	1,667		7	•••
Greece	12	1	1,842	3	21
Servia	4	1	1,853	2	6
Roumania	114	14	4,810	400	2
Turkey	280	45	3,220	75	3,532
Europe	148,924	78,580	71,844	5,196	9,675
United States .	6,143	42,800		110	
Canada	2,150	2,100	•••	•••	•••
Spanish America	33,340	115	•••	47	
West Indies .	2,480	1.030		•••	
Australia	604	2,220	•••	1	
Total	193,643	126,845	71,844	5,054	9,675

For expenditure, clergy, &c., see Church.

### B.—United Kingdom.

	Thou	sands Om	itted.	Percentage.						
	England.	Scotland	Ireland.	England.	Scotland.	Ireland.	U. Kingdom			
Ch. of England	18,798	99	636	72.3	2.7	12.3	55.8			
Rom. Catholic	1,066	318	3,952	4 1	8.6	77.4	15.2			
Presbyterian .	114	2,997	486	0.4	81.0	9.4	10.3			
Methodist, &c.	5,990	281	48	23.2	77	0.9	18.7			
Total	25,968	3,695	5,122	100.0	100.0	100.0	100-0			

# C.—England, Church Attendance. Ratio to Population.

		mario to 1 optimion.	
	Per 1	Per	l Per
	Cent.	Cent.	Cent
Sheffield .	. 23	Bradford 27	Northampton 40
Bolton	. 24	Bristol 31	Hull 41
Nottingham	. 24	Southampton. 38	Portsmouth . 41
Liverpool.	. 26	Derby 39	Bath 52

The total showed 37 per cent. Church of England, 8 per cent. Roman Catholics, and 55 per cent. made up of various sects.

#### D.-United States.

	Thousand	• Omitted.	Perce	Church Property,		
	1835.	1880.	1885.	1880.	Millions &. 1870.	
Methodists	1,240	14,667	8.6	29.4	9	
Baptists	2,929	10,464	20.5	20.9	11	
Presbyterians .	2.102	6,478	14.6	12.9	15	
Roman Catholics	555	6,143	3.9	12.3	13	
Various	7,532	12,407	52.4	24.5	27	
Total	14,358	50,159	100.0	100-0	75	

#### E.—Roman Catholics, British and American.

			Clergymen.	Churches.	Laity.
Great Britain			2,305	1,461	1,384,000
Ireland			2,977	2,620	3,952,000
Canada			2,130	1,660	2,150,000
Australia .	:		402	787	604,000
India	:		1.134	400	1.318,000
Other Colonies	:	:	322	344	465,000
British Empire	_		9.270	7,272	9.873.000
United States			6,410	7,666	6,143,000
Total .			15.680	14.938	16,016,000

#### RENTES.—Holders of French national stock.

Year.	Year. Holders, Thousands Omitted.		housands	Average   Sum.	Year.	T	Holders, nousands Omitted.	Average Sum.
1810			146	£480	1860		1,074	£395
1830			195	1,230	1870		1,254	360
1850			846	350	1880		4,630	170

RESISTANCE.—On a railway it increases with the speed of the train per hour (on level way) as follows:—

Miles.		Lbs. per Ton.	Miles,		Lbs. per Ton.	Miles.		Lbs. per Ton.
10.		8.4	31.		18.2	50.		32.9
14.		12.6	85.		22.5	53.		41.7
29.		16.5	41.		26.8	61.		<b>52</b> ·6

See Gradients.



# 392

# REVENUE.

# REVENUE.

# A.—BRITISH REVENUE.

		Amount,	Thousands	Omlitted.	Shillings per Inhabitant,	
Date.	Reign.	Nominal.	In Silver.	Present Value.	In Silver,	Present Value.
1080	William I	£400	£1,320	£4,010	12	36
1090	Rufus	350	1,150	3,520	10	30
1120	Henry L	300	990	3,005	9	27
1150	Stephen	250	830	2,510	8	24
1180	Henry II	200	660	2,005	6	18
1210	John	100	330	1,000	3	9
1250	Henry III	80	264	800	21	7
1300	Edward I	150	495	1,502	45	13
1350	Edward III	154	460	1,360	4	12
1400	Henry IV	100	264	800	2	6
1480	Edward IV	100	162	500	1	3
1500	Henry VII	400	650	2,000	3	9
1540	Henry VIII	800	1,300	3,600	6	16
1600	Elizabeth	500	550	1,500	2	7
1620	James L	600	640	1,500	21	6
1640	Charles I	896	950	1,800	45	8
662	Charles II	1,800	1,910	3,600	7	14
686	James II	2,002	2,120	4,010	8	15
1700	William III	3,895	4,135	8,030	15	29
1713	Anne	5,692	6,030	11,080	18	33
1716	George I	6,763	7,160	13,200	21	38
1728	George II	8,523	9,030	16,800	25	47
1780	George III	8,880	9,420	13,330	20	30
1790	,, , ,	13,745	14,540	18,650	29	37
1800	,,	37,520	39,700	50,350	76	96
1810	,, , ,	52,672	55,810	65,840	93	108
1820	George IV.	61,634	61,634	74,270	62	74
1830	William IV	59,365	59,365	68,740	50	58
1840	Victoria	52,916	52,916	58,110	40	44
1850	y	58,205	58,205	61,300	43	45
1860	,,	71,090	71,090	64,600	49	45
1870	,	75,434	75,434	64,400	49	41
1880		81,265	81,265	81,265	47	47
1883	,,	89,004	89,004	89,004	49	49



#### RIBBONS-RICE.

#### B.—FRANCE.

Date.		Reign.	Revenue, Thousands Omitted.	Population, Thousands Omitted.	Shillingu per Inhab.
1252		Louis IX.	£140	10,150	ł
1597		Henri IV.	8,760	14,500	5
1742		Louis XV.	13,703	22,000	13
1828		Charles X.	88,400	81,600	24
1840		L. Philippe.	46,400	<b>34</b> ,100	27
1860		Napoleon III.	68,500	87,290	87
1882	•	Republic.	112,300	87,430	60

For other countries see Finances.

**RIBBONS.**—The value manufactured has been as follows (thousands omitted):—

•			1872.	1881.
France			£4,920	£5,016
Germany .			2,810	2,420
Switzerland .			2,590	2,230
Austria			920	710
Great Britain .			800	800
United States .			100	8,430
Other countries	•	•	400	900
Total .			£12.540	£15,506

#### RICE.

# A.—Production and Consumption (Thousands).

				10116	
		Acres.	Crop.	Consump- tion.	Exporta-
India .		22,600	16,800	15,700	1,100
Ceylon		900	480	830	150
Java .		5,200	2,740	2,200	540
Manilla		3,140	1,800	1,750	50
Japan .		6,790	8,450	8,250	200
Italy .		570	710	560	150
Spain .		52	80	80	•••
United Sta	tes	120	90	90	•••

The consumption in Europe has doubled since 1870, and is now nearly 2 million tons per annum.

#### B.—Consumption in United Kingdom.

Year.		Tons.	Lbs. per Inhab.	Price per Cwt.
1860		18,100	11	
1870		95,200	7	•••
1880		221,000	14	

Rice has been successfully grown in the Thames Valley near Windsor.

RIFLE.—The competition for the Elcho Shield by the best shots in the 3 kingdoms in 1883 resulted as follows:-Irish 1600, Scotch 1589, English 1564; each nation being represented by 8 champions.

#### RIOTS.

1346. Citizens of Mayence burn alive 12,000 Jews.

1780. Lord George Gordon fires London in 36 quarters: 285 rioters killed by troops.
1882. Rioters in Russia destroy Jewish property worth

16 millions sterling; at Warsaw 900 shops sacked.
1882. Riots at Alexandria: 460 Europeans killed by Arabs, and city burnt. The indemnities awarded to 9100 claimants summed up £9,200,000, of which 31 per cent. to Greeks, 24 per cent. to Italians, and 5 per cent. to English.

#### RIVERS.

#### A.—Volume of Water.

				-	
,	Thousands Omitted	Outflow, Million Cub. Feet per Hour.		Basin, Sq. Miles, Thousands Omitted.	
Amazon .	1,920	3,700	Don.	. 220	430
La Plata .	1,560	3,100	Dnieper	. 170	450
Mississippi .	1,170	2,070	Dwina	. 124	150
St. Lawrence	340	1,670	Rhine	. 89	230
Oby	1,370	1,200	Vistula.	. 75	160
Volga	653	1,120	Loire	. 45	120
Yangzekiang	742	1,100	Rhone	. 43	180
Nile	708	560	Elbe.	. 59	100
Ganges .	443	700	Scine	. 26	80
Danube .	312	960	Thames	. 6	40
Euphrates .	243	420	Tiber	. 5	80
3 Tibers	= 1 Sein		3 Ganges		Mississippi.

2 Mississippis = 1 Amazon 1 Amazon = 16 Rhines, 8 Rhines = 1 Ganges.

## B.—CURRENTS.

					Poet, per Minute.	Miles, per liour.
Seine, Paris .					135	1.2
Thames, London					180	2.0
Tiber, Rome .		•			200	2-2
Danube, Ebersdorf	•	•			210	2.3
Loire (average).	•	•			260	2.9
Rhone " .					390	4.3
Durance " .		•			510	5·7
Rhine " .		•			540	6-0
Amazon ,, .	•	•	•	•	780	8.7



## ROADS.

# OS. 395

# C.—Length in Miles.

Amazon .	3,270	Hudson .	280	Plata	2,130
Amoor	2,240	Indus	1,720	Po	356
Bramapootra	1,560	Jenisei .	2,100	Rhine	715
Columbia .	1,090	Kiang-ku.	1,050	Rhone	450
Congo	1,400	Lena	2,500	St. Lawrence	1,930
Danube	1,540	Loire	549	Seine	429
Dnieper .	1,070	Mackenzie	1,600	Senegal	850
Don	985	Magdalena	820	Severn	210
Douro	490	Mississippi	2,250	Shannon .	220
Ebro	470	Niger	2,300	Tagus	570
Elbe	615	Nile	2,750	Thames	204
Euphrates .	1,360	Norte	1,250	Tiber	210
Ganges	1,350	Oby	2,800	Vistula	601
Garonne .	400	Orange .	1,050	Volga	1,990
Guadiana .	320	Orinoco .	1,150	Yang-kiang	2,700
Hoang-ho .	-2,400	Oxus	1,300	Zambesi .	950

## ROADS.

## A .- HIGHWAYS OF NATIONS.

	1	diles (Th	Miles of Way.			
	Roads.	Rail- ways.	Water- ways.	Total.	Per 10,000 Inhab.	Per 100 Sq. Miles.
United Kingdom .	142	18	5	165	51	140
France	238	18	8	264	70	130
Germany	265	21	17	303	67	150
Russia	65	15	22	102	13	5
Austria	66	12	3	81	22	30
Italy	74	5	2	81	28	72
Spain and Portugal	16	6	2	24	12	11
Belgium	5	3	1	9	17	80
Holland	3	i	1	5	13	25
Denmark	2	1	l	3	16	21
Sweden	35	4	1	40	90	24
Norway	14	1		15	80	12
Europe	925	105	62	1,092	35	27
United States	260	104	21	385	75	10
Canada	6	8	4	18	42	1
India	58	11	5	74	3	5
Total	1,249	228	92	1,569	28	12

The cost of road-making is about £800 a mile in England, £920 in France, and £130 in Italy. The maintenance averages £15 in England and £7 in France per mile per

annum. English main-roads, according to Macadam, cost £1760 per mile. French roads are of 4 classes, and cost as follows:—

	Width.	Cost per Mile.
1st class.	50 feet.	£1,900
2nd ,	40 ,,	1,200
3rd .,	83 ,	800
4th ,,	25 ,,	400

Between 1830 and 1880 France spent 180 millions sterling on common high-roads.

#### B.—HIGH-ROADS IN ENGLAND.

			Miles,	· .
		Main.	Ordinary.	Total.
1813		19,700	95,100	114,800
1839		21,962	104,772	126,734
1870		15,125	102,615	117.740

The development of railways seems to have diminished the mileage of roads.

#### C.-WAGGON DRAUGHT PER TON.

			Lbs.			Lbc
Well-made pavement.				Road of stone and clay .		65
Macadamised road .	•	•	46	Road thickly gravelled .	•	147

#### ROUBLES.

Year.	Issue, Millions.	Value, Penco.	Year.		Issue, Millions.	Value, Pence.
1774	. 20	38	1843		600	12
1786	. 100	36	1844		180	35
1796	. 160	24	1850		310	33
1800	. 210	18	1860		690	30
1810	. 580	12	1870		720	28
1817	. 870	9	1880		1,180	24
1823	. 605	10	1883		1,130	23

The conversion of 1843 consisted in calling in the old notes and giving 30 new roubles for 100 old ones.

ROUND TOWERS.—There are 45 in Ireland: the smallest is St. Kevin's, Co. Wicklow, 46 feet high by 12 feet diameter; the greatest is at Kilmacduagh, Galway, 108 feet high by 18½ feet diameter.



#### RYE—SALMON.

RYE.		Acres, Thousands	Million	Bushels,		
		Omitted.	Bushels.	Per Acre.	Per Inhah.	
France		8,800	80	21	2.2	
Germany		15,100	240	16	5.2	
Russia		72,200	680	9	8-2	
Austria		9,800	130	14	8.6	
Italy and Spain		8,600	68	19	1.5	
Belgium and Holland	ł	1,220	28	23	8.0	
Scandinavia .		1,800	40	22	4.8	
Reumania .		1,100	24	22	4-2	
					_	
Europe .		108,130	1,290	12	4.2	
United States .		2,100	81	15	0.6	
Other countries		5,000	87	17	•••	
				_		
Total .	•	115,230	1,408	13	•••	

The rye-crop of the world is worth 232 millions sterling, and feeds 180 millions of people.

# S

**SADDLERY.**—The value annually exported from Great Britain has been:—

Years. 1868-71		Per annum. £370,000	1	Years. 1876–79		Per annum. £395,000
1872-75		408,000	1	1880-82		466,000

#### SALMON.

The annual fishery in the United Kingdom is as follows—

England						Tons. 360	Value. £40,000
Scotland Ireland			•	•	•	2,110 1,130	232,000 120,000
	To	tal				3,600	£392,000

London consumes more than half, namely, 1840 tons yearly. England imports 150 tons per annum from Norway. Salmon have been caught in the Tay weighing 70 lbs., but the average weight of this fish is only 8 lbs. The exportation of tinned salmon from California exceeds 10 million lbs. yearly, of which one-half goes to England, one-fourth to the Continent, and the rest to New York, &c. The quantity has doubled since 1875. This is irrespective of 6 million lbs. annually consumed in California.

#### SALT.

#### A.—Production and Consumption.

	Tons (Thous	ands Omitted).	Lbs. Consumed per	Salt Tax.	Per Inhab., Pence.	
	Production.	Consumption.	Inhab.	DELL TEXT.		
U. Kingdom	2,280	1,230	80	•••	•••	
France.	. 820	800	50	£642,000	4	
Germany	. 515	500	25	1,805,000	10	
Russia.	. 630	700	19	2,110,000	6	
Austria	. 260	220	14	8,360,000	22	
Italy .	. 240	240	18	8,280,000	28	
Spain and P	ort. 420	160	17	•••	•••	
U. States	. 750	930	39	•••	•••	
India .	. 540	910	9	6,750,000	8	

#### B .- SALT IN GREAT BRITAIN.

Period.		Average Producțion, Tons per Annum.	Duty per Ton.	Price per Ton.	Lbs. Con- sumed per Inhabitant,
1800-1806		203,000	£30	£32	16
1807-1815		230,000	30	32	16
1816-1823		257,000	30	32	16
1824-1840		410,000	•••	1	19
1841-1860		880,000	•••	16s.	32
1861-1870		1,540,000	•••	14s.	58
1871-1880		2,020,000	•••	12s.	72

The consumption in the United Kingdom averages 40 lbs. per inhabitant for cooking or condiment, the rest being used for chemicals, manure, &c. Reduced death-rate and higher efficiency of workmen are results of the greater consumption of salt. Hence the salt taxes in various European countries are most injurious to public interests.

#### C .- SALT IN SEA-WATER.

Sea.		rcentage of Salt.	Salt per Ton of Water, lbs.	Sea.		rcentage ( Salt.	Salt per Ton of Water, lbs.
Caspian		0.2	11	Red .	• .	4.3	93
Black		1.2	26	Dead .		8.5	187
Baltic		1.3	28	Mediterrane	an	3.9	85
Eng. Char	nel	3.3	72	Atlantic		3.7	81

#### SARDINES.

Spain

Annual	Fi-hery.
Million Fish.	Tons Weight.
1,260	52,000

The exportation from France averages 450 million per annum, say 20,000 tons.



#### SAVINGS-BANKS.

#### **SAVINGS BANKS.**

# A .- AMOUNT OF DEPOSITS.

		Thousands Omitted.					
	1850.	1860.	1870.	1882.	1860.	1882	
	£	£	£	£	8.	8.	
U. Kingdom .	30,100	41,300	53,100	80,400	28	45	
France	3,200	13,500	27,400	61,200	8	33	
Germany	5,400	16,400	35,000	105,300	10	47	
Russia		1,100	2,400	3,200		1	
Austria	19,600	28,000	40,300	85,100	19	46	
Italy	2,200	12,400	14,800	33,600	12	24	
Switzerland .	2,300	5,100	11,600	12,200	47	88	
Spain		200	1,000	2,400		3	
Belg. and Holl.	1,800	2,200	4,500	7,300	5	16	
Scandinavia .	3,100	7,200	14,600	27,300	25	67	
Europe .	67,700	127,400	204,700	418,000	11	27	

# B.—Number of Depositors.

		Percentage, Ratio to Pop.				
	1850.	1860.	1870.	1881.	1860.	1881.
U. Kingdom .	1,060	1,580	2,620	8,715	5.2	10.6
France	630	1,100	2,100	3,900	3.3	10.3
Germany .	980	1.500	2,200	4,200	4.3	9.4
Russia .	•••	100	150	200	0.2	0.3
Austria	500	1,100	1,300	1.850	3.6	6.4
Italy	170	380	571	1.970	1.5	6.8
Switzerland .	181	355	512	1,080	4.2	35.3
Spain	•••	80	200	250	0.5	1.5
Belg. and Holl.	90	100	180	310	1.2	3.3
Scandinavia .	300	400	900	1,600	6.8	18.1
Europe .	3,911	6,695	10,833	19,075	3.0	6.5

The Savings Banks in the United States had 2,200,000 depositors in 1873 with 155 millions sterling of deposits, and the latter have now risen to 202 millions sterling. The French Savings Banks in January 1883 counted 4,352,000 depositors.

#### C .- SAVINGS BANKS OF UNITED KINGDOM.

	Am	ount of	Deposits, T	housands.	Shillings per Inhabitant.			
Year.	En	gland.	Scotland.	Scotland. Ireland.		Scotland.	Ireland.	
1880 .	. £1	2,600	i	£910	18	i	2	
1840 .	. 2	0,700	£520	2,200	25	4	5	
1850 .	. 2	7,680	1,080	1,360	80	7	4	
1860 .	.   30	6,700	2,410	2,140	37	16	7	
1870 .	.   4	6,280	4,130	2,690	40	25	10	
1881 .	.   69	9,000	7,560	8,800	54	40	15	

# D.—Savings in Ireland.

#### Thousands Omitted.

Year.	Bank Deposits.	Government Stocks.	Total.	Amount per Inhab.			
1860	£15,609	40,104	55,713	£9 19 0			
1865	18,619	37,513	56,132	10 0 6			
1870	24,366	36,497	60,863	11 5 0			
1875	33,519	33,710	67,229	12 14 0			
1881	30,161	31,605	61,766	12 2 0			

**SCIENCE.**—United Kingdom in 1881 had 1355 schools of science, with 66,600 pupils; annual cost, £295,000, or 89 shillings per pupil.

# SEA.

	Yards,	Depth.	Yards, Depth.
Atlantic	4,026 4,252 3,658 1,690	Maximum. 7,750 9,310 6,040 5,300 3,950	Average. Maximum.  Irish 240 710  English Channel 110 300  German 96  Levant 72  Adriatic 45
Mediterranean	1,476	2,860	Baltic 43

The Southern Ocean below Cape Horn reaches a depth of 5500 yards, and off Cape of Good Hope, 5700 yards. The average of the Bay of Biscay is 1200 yards.

#### SEALS.

Fishery.	A	nual Slaughter.	Value.	Tons Oil
Canadian .		460,000	£280,000	9,200
Norwegian .		80,000	50,000	1,600
Falkland Islands		5,000	3,000	100
Montevideo .	•	5,000	3,000	100
Total .		550,000	£336,000	11,000



The skins are worth 2 shillings each, the oil, £25 per ton. One fishing vessel sometimes kills as many as 50,000 in a season, off Nova Scotia. The barbarous practice of slaughtering seals while suckling their young, threatens to exterminate the breed.

#### SEAMEN.

#### A.—GENERAL SUMMARY.

		Ratio to			
	Navy.	Merchant,	Coast, Fishing.	Total.	tion, per Cent.
United Kingdom .	45	193	167	405	1.11
France	43	35	94	172	0.45
Germany	8	40	27	` 75	0.16
Russia	26	23	74	123	0.15
Austria	10	7	9	26	0.07
Italy	15	52	74	141	0.50
Spain	7	23	44	74	0.45
Portugal	4	5	4	13	0.30
Holland	7	18	13	38	0.95
Denmark	1	7	5	13	0.70
Sweden and Norway	9 1	79	143	231	3.55
Greece	1	11	15	27	1.52
Turkey	4	10	3	17	0.22
Europe	180	503	672	1,355	0.42
United States	8	120	54	182	0.35
Canada	•••	50	65	115	2.54
Brazil	2 1	6	8	16	0.18
Argentine Republic	1	2	8	11	0.55
Australia	•••	11	3	14	0.48
Total	191	692	810	1,693	0 45

If marines and coast-guards were added, the total would fall little short of 2 millions of men, or very nearly 3 per cent. of the able-bodied men of the Christian world.

$\mathbf{R}$ $-$	SEAVEN	AND	TRADE	OF	UNITED	KINGDOM.

Year.		Seamen.	Trade, Millions £.	Trade per Seaman.
1850		151,400	169	£1,120
1860		171,600	318	1,850
1870		195,900	459	2,340
1880		192,900	571	2,950

Some of the above trade is done on foreign bottom, but it is balanced by the trade between foreign countries done on British bottom, not included above.

# C .- DEATHS OF BRITISH MERCHANT SAILORS (1879).

21 to 80	•	:	1,488 = 1,064 =	40 ,, 29 ,,	Suicide	:	:	1,886 = 83 =	87 ,, 1 ,,
Total			8,692 =	100 ,	Total			3,692 =	100 ,,

The death-rate was 19 per 1000, or almost double the corresponding rate for age in England. Deducting those drowned, the rate would be lower than on land.

#### SERPS.

#### A .- Russian Serfs in 1861.

		T	housands Omitt	ed.
Crown serfs . Appanage . Held by nobles	•	Male. 11,168 1,624 10,674	Female. 11,683 1,702 11,081	Total. 22,851 3,326 21,755
Total .		23,466	24,466	47,932

## B.-Noblemen's Serfs in 1861.

Nobles. 23,100	Serfs. 18,575,000	Average. 802
86,150	2,520,000	70
43,800	660,000	15
103,050	21,755,000	211

#### C.—Cost of Redemption.

Mortgages rem	itted	١.			£30,400,000
Government so	rip				20,280,000
Paid by serfs	•		•		10,470,000
Balance due		•			3,900,000
Indemnity	7 awa	rd			£65,000,000

The indemnity to the nobles was £3 per serf. The lands are mortgaged to the State till 1912. The lands ceded to Crown serfs are mortgaged only till 1901. The above item of "mortgages remitted" is the amount due by nobles to the Imperial Bank and cancelled,



#### SERFS—SEWAGE.

#### D.—Lands held by Freed Serfs (1879).

Title.			Holders.	Acres.	Average Acres.
Crown-gift			6,117,000	84,200,000	14
Appanage			1,625,000	80,200,000	18
Purchase .			10,187,000	65,500,000	61
Beggar-lots	•	•	1,840,000	6,440,000	8 <del>1</del>
Total			19,719,000	186,340,000	9

In return for crown-gift the holders have to pay 50 per cent. extra poll-tax till 1902. Beggar-lots are lands given gratis by the nobles to the peasants, rather than sell farmlots at £1 per acre to them.

# E.—Austrian Servitude (1840).

Labour (2 days per w	reek)				Value. £35,000,000
Tithe of crops, &c.	. ′	•			12,000,000
Male tribute, timber		•			1,400,000
Female tribute, spun	wool	•			1,800,000
Fowl, eggs, butter		•	•		1,000,000
• .	<b></b>				451 000 000
	Tota		_	_	£51,200,000

There were 7 million serfs, whose tribute averaged more than £7 per head, which was, in fact, the rent of their farms. Some Bohemian nobles had as many as 10,000 serfs. The redemption was effected by giving the nobles 5 per cent. Government scrip, and land then rose 50 per cent. in value.

# F.-GERMAN SERFS.

In 1848 the State took 60 million acres from the nobles, leaving them still 25 million acres, and gave the former among the serfs. Indemnity as follows:-

1. Government scrip, £180 for each serf family, to nobleman,

 Land-tax, £3 per annum, transferred to peasant.
 Interest, £7 per annum for 47 years, to be paid by peasant to the State, being 4 per cent. on cost of redemption.

BEWAGE.				Sewers, Cost per Mile,	Tons of Sewage Discharged Weekly.
Manchester				£1,240	770,000
Preston				2,000	140,000
London				5,550	5,500,000
Blackburn				4.700	150,000

The system of sewage farms requires an acre per 500 inhabitants, say 1000 acres for a city like Manchester or Liverpool. Sewage is supposed to have a market value of one penny per ton.

#### SEXES.

# A .- RATIO TO POPULATION.

		Pe	1000.	1			Per	1000.
		Male.	Female.	i		-	Hale.	Female.
England .		485	515	Italy .			503	497
Scotland .		481	519	Spain .			496	504
Ireland .		490	510	Belgium			501	499
United Kingde	om .	485	515	Holland			490	510
France		406	504	Denmark			491	509
Germany .		489	511	Sweden			484	516
Russia		497	503	Norway			491	509
Austria .		485	515	United Sta	ites	•	506	494

# B.—United Kingdom, Population in Sexes.

# Thousands Omitted.

		Males.		Females.			
	England.	Scotland.	Ireland.	England.	Scotland.	Ircland.	
1821	5,850	980	3.340	6,140	1.100	3,450	
1831	6,770	1.110	3,790	7,120	1,240	3,970	
1841	7,770	1.240	4,010	8.130	1,370	4,150	
1851	8,780	1.370	3,190	9,140	1.510	3,360	
1861	9,801	1,453	2.832	10,318	1,616	2.957	
1871	11,059	1,603	2,640	1.653	1.757	2.773	
1881	12,625	1.798	2.523	13,343	1.937	2,637	

# SUMMARY FOR UNITED KINGDOM.

	, Th	iousands Omitte	ed.	Ratio per 1000.		
	Males.	Females.	Total.	Males.	Females	
1821	10,170	10,690	20,860	487	513	
1831	11,672	12,330	24,002	486	514	
1841	13.020	13,650	26,670	488	512	
1851	13,340	14,010	27,350	489	511	
1861	14,086	14,891	28,977	485	515	
1871	15,302	16.183	31,485	486	514	
1881	16,946	17,917	34,863	485	515	



# SHEEP.

# SHEEP.

# A .- NUMBER AND SLAUGHTER.

	Tho	usands Omi	tted.	Per 1	00 Inhab.	Lbs. Mutton
	Number.	Annual Slaughter.	Tons Mutton.	Sheep.	Slaughter.	nor
United Kingdom .	27,896	11,200	285	79	32	19
France	23,370	9,300	165	65	26	10
Germany	25,200	10,100	195	55	22	10
Russia	48,820	19,600	370	60	24	10
Austria	21,418	8,600	160	58	23	10
Italy	6,980	2,800	55	25	10	4
Spain and Portugal	25,420	10,200	120	125	50	13
Belgium and Holl.	1,530	600	16	16	6	3
Scandinavia .	4,990	2,000	43	57	23	11
Roumania, &c	6,180	2,500	50	77	31	16
Greece	2,292	900	15	138	55	17
Europe	194,096	77,800	1.474	65	26	11
United States .	49,237	14,000	340	95	27	14
Canada	3,330	1,300	35	75	30	17
Australia	65,915	4,000	90	2,410	140	70
River Plate	76,230	6,000	100	2,540	200	72
Algeria	8,788	3,000	55	290	100	40
Cape Colony .	11,280	2,400	40	1,070	230	90
The World .	394,832	108,500	2,134	109	30	12

The United States census report for 1880 gives 35 million sheep; the agricultural report for 1882 gives 49 millions.

# B .- SHEEP IN UNITED KINGDOM AND UNITED STATES.

			Number, Thous	ands Omitted.	Sheep per 100	Inhabitant
			U. Kingdom.	U. States.	U. Kingdom.	U. States.
1840			24,190	12,897	90	75
1850	:		29,780	21,720	106	94
1860		•	32,960	22,470	112	72
1870			34,666	28,480	110	72
1882			27,896	49,237	79	93

# C.—Sheep in Australia, Cape, and La Plata.

# Thousands Omitted.

1830			Australia. 770	Cape Colony. 420	River Plate. 1,870	Total. 3,060
1840			3.360	2.340	4.620	10,320
1850			10.140	4.270	8,490	22,900
1860			29,870	6.220	17,340	53,430
1870	·		51,294	10,160	55.780	117,234
1882	:	:	65,915	11,280	76,230	153,425

#### SHIPPING.

#### A.—Tonnage since 1820: The World.

#### Thousands Omitted.

					<u> </u>	_		
			Salling.	Steam.	Total.	Effective.	Stea	m ratio.
1820			3,140	6	3,146	3,170	1 p	er cent.
1830			3,022	28	3,050	3,164	4	,,
1840			4,560	116	4,676	5,140	11	**
1850			6,513	392	6,905	8,473	23	**
1860			9,586	820	10,406	13,686	30	27
1870			13,868	1,918	15,576	23,458	41	,,
1881	•	•	15,002	5,644	<b>20,64</b> 6	43,222	66	**

# B.—British and Foreign Flags.

## Seagoing Tonnage (Thousands Omitted).

	Bri	tish.	Other	Flags.	Total Nominal.		
Year.	Steam.	Sailing.	Steam.	Sailing.	British.	Other Flags.	
1840	95	3.216	21	1.344	3,311	1,365	
1850	188	4,045	204	2,468	4,233	2,672	
1860	502	5,211	318	4,375	5,713	4,693	
1870	1,203	5,947	715	7,921	7,150	8,636	
1881	3,105	5,430	2,539	9,572	8,535	12,111	

#### Carrying-power.

	Tons (Thous	ands Omitted).	Percentage.			
Year.	British.	Other Flags.	British.	Other Flags.	Total	
1840 1850 1860 1870	3,691 4,985 7,721 11,962 20,955	1,449 3,488 5,965 11,496 22,267	74 58 56 51 49	26 42 44 49 51	100 100 100 100 100	

In the above tables British includes not only vessels of the United Kingdom but also Colonial. The net tonnage of steamers is given, which is only 70 per cent. of the gross tonnage.

<sup>\*</sup> Effective tonnage is ascertained by multiplying steam tonnage by 5 and adding the product to sailing tonnage. Steamers have 5 times the carrying-power of sailing-vessels of equal tonnage, a steamer making 5 ocean trips, or 6 short trips, for one of a sailing-vessel.

į







#### SHIPPING.

## C.—Shipping of All Flags.

				III FLAGS.		
Flag.	Non	inal Ton: Thousand	nago, s.	Carr	ying Po	wer.
ring.	Sailing.	Steam.	Total.	Tons, Thousands.	Ratio.	Tons per 100 Iuhab
U. Kingdom .	3,688	3,004	6,692	18,110	42.1	51
France	642	278	920	2,032	47	5
Germany	966	216	1,182	2,046	47	4
Russia	481	73	554	846	20	l i
Austria	248	62	310	558	1.3	1
Italy	922	77	999	1,307	3.0	I 5
Spain	374	164	538	1,194	2.8	7
Portugal	71	11	82	126	0.3	l è
Belgium	10	65	75	335	0.8	8 6
Holland	332	83	415	747	17	19
Denmark	175	51	226	430	īò	22
Sweden	447	84	531	867	20	20
Norway	1,456	55	1,511	1,730	40	95
Greece	201	10	211	251	80	14
Europe	9,894	4.151	14,045	30,579	71.0	10
United States .	2,856	1,211	4.067	8,910	20.6	17
Canada	1,233	78	1,311	1,623	3.8	38
Australia	201	77	278	586	1.3	20
India, Cape, &c.	427	28	455	567	1.3	
Japan	151	41	192	356	0.8	ï
Brazil, Chili, &c.	240	58	298	530	1.2	
Total	15,002	5,644	20,646	43,151	100-0	•••

# D .- Trade and Shipping Compared (the World).

Year.	Merchandise,	All Flags, Thou	Tonnage, sands.	Goods carried per Ton.		
	Millions &.	Nominal.	Effective.	Nominal.	Effective.	
1830	172	3,050	3,164	£57	£55	
1840	258	4,676	5,140	55	50	
1850	390	6,905	8,473	56	46	
1860	625	10,406	13,686	60	45	
1870	884	15,576	23,458	57	45 38	
1881	1.240	20,646	43.222	60	29	

By referring to Ballast, it will be seen that one-fifth of all vessels enter port in ballast. Moreover, the great steamboat lines are used more for passengers than cargo. This explains why the increased tonnage carrying-power on sea is much greater than the growth in merchandise carried over sea. Coal and iron are also more largely carried than before, being articles of inferior value.

# 408

# E.—Vessels over 100 Tons (1881).

		Number.		Tons (	Net) per	Vessel
	Steam.	Sail.	Total.	Steam,	Sail.	Total
Great Britain .	2,869	11,893	14,762	930	352	474
French	335	2,772	3,107	820	194	270
German	277	3,113	3,390	740	303	342
Russian	166	1,875	2,041	501	222	251
Austrian	82	599	681	770	401	440
Italian	103	2,936	3,039	701	308	325
Spanish	226	1,578	1,804	595	205	253
Portuguese .	17	424	441	640	235	250
Belgian	40	29	69	1,118	450	810
Dutch	111	1,112	1,223	723	295	340
Danish	109	1,172	1,281	450	152	177
Swedish	258	1,979	2,237	270	201	210
Norwegian .	148	4,160	4,308	331	330	330
Greek	20	1,672	1,692	476	192	194
Turkish	10	374	384	558	166	180
Europe .	4,771	35,688	40,459	820	301	361
United States.	543	5,958	6,506	690	342	365
Canada	918	6,459	7,377	128	184	155
Various	155	479	634	440	332	360
Total	6,392	48,584	54,976	690	288	330

# F .- BRITISH MERCHANT NAVY.

	Year,		2000			Ton	sper	
Yes			Vessels.	Tons.	Sailors. Ship. S		Sallor.	Reign.
1588			470	37,400	, a.s.	80		Elizabeth.
1610			910	83,000		90	100	James I.
1666			1,320	120,000	***	90	***	Charles II.
1688			2,620	210,000		80	244	James II.
1702			3,260	261,000		80	4.4	Anne.
1760			5,730	487,000	***	85	***	George III.
1800			17,410	1,856,000	140,000	106	14	
1810			23,703	2,426,000	162,000	102	15	
1820			25,374	2,654,000	175,000	105	15	George IV.
1830			23,721	2,533,000	155,000	107	16	William IV.
1840			28,962	3,311,000	201,000	114	17	Victoria.
1850			34,288	4,233,000	239,000	124	18	100
1860			29,469	5,713,000	230,000	193	25	**
1870		1	32,920	7,150,000	261,000	216	27	
1881			30,531	8,535,000	270,000	280	31	

This includes colonial shipping.



#### SHIPPING.

#### G .- Shipping of United Kingdom.

_	<b> </b>		isands	Tons	per	Tons Carrying Power.		
Year.	Vessels.	Tons.	Scamen.	Vessel.	Sea- man.	(Thousands Omitted).	Per 100 Inhab.	
1810	20,253	2,211	145	105	15	2,211	12	
1830 1850	19,174 25,984	2,202 3,565	131 148	114 138	17 24	2,280 3,950	10 15	
1870 1881	22,180 19,311	5,691 6,490	196 193	256 336	29 33	9,720 18,110	31 51	

The carrying-power has grown almost eight-fold since 1810, and if we required the same ratio of seamen we should need at present 1,300,000 sailors to do the work.

# H.—EARNINGS OF SHIPPING.

		Thousands Omitted.						
Flag.		Tons Carried.	Freight,	Passengers.	Total.	Ratio.		
British .	6	63,190	£61,400	£12,300	£73,700	55.2		
French .		6,100	5,900	1,200	7,100	5.4		
German .		6,200	6,000	1,200	7,200	5.4		
Italian .	0.1	3,900	3,700	800	4,500	3.3		
Spanish .		3,600	3,500	700	4,200	3.1		
United States	5	37,000	10,500	15,500	26,000	19.6		
Various .		9,500	8,500	1,800	10,300	8.0		
Total .		129,450	£99,500	£33,500	£133,000	100.0		

British includes colonial. The table comprises all trade.

## I.—United States Stramboat Traffic (1880).

	ı		Tho	usands O	mitted.	
	Steamers.	Tonnage.	Passen- gers.	Goods, Tons.	Earn- ings, £.	Wages, £
Lakes	947	222	1,420	4,380	2,520	690
Mississippi .	681	132	2,710	4,820	2,460	790
Ohio	473	107	4,030	2,410	1,580	585
N. England .	463	119	15,470	2,630	1,620	560
Middle States	1,459	433	135,720	7,190	6,660	1,830
Gulf	1,116	208	9,160	4,110	2,870	965
Total .	5,139	1,221	168,510	25,540	17,710	5,420

The crews mustered 57,100 men, their wages averaging £85. The steamers carried merchandise 21 times their own tonnage, besides passengers. Each steamer carried in the year 33,000 passengers and 5000 tons of merchandise.

# K.—Size, Death-rate, &c., of Ships.

Flag.	Average !	l'onnage.	Perce Annua	ntage l Loss.	Life of Ship,	Tons Carried	
	Steamer.			Years.	Beaman.		
U. Kingdom France Germany Holland Scandinavia Italy United States	520 206 705 192 525 228 660 290 360 230 518 220 237 326		2-94 2-47 2-77 3-84 1-96 1-74 4-06	3·93 4·04 4·04 4·49 3·20 2·94 5·45	26 20 23 22 30 28 18	280 174 154 123 106 75 308	

The apparent higher efficiency of American seamen is because the traffic is on internal waters, mostly for short distances. In reality the English seaman carries most. See Wrecks.

#### L.-Working Expenses.

For a vessel of 1000 tons, crew 20 men, the monthly expenses are as follows:—

British . . £145 | German . . £135 | Italian . . £ 95 French . . 135 | Austrian . . 125 | American . 200

# M.—Ship-building.

		To	ons.	Tons per Vessel.		
Y	car.	British.	American.	British.	American.	
1850		134,000	272,000	192	201	
1860	•	212,000	213,000	208	198	
1870		343,000	277,000	353	152	
1882		1,194,000	281,000	770	250	

Steamers cost from £16 to £24 per ton. A first-class wooden ship can be built in Canada for £9 per ton; in United States, £11.

The shipbuilding of Great Britain in 1880-82 was as follows:—

				Tens.	
			1880.	1881.	1882
Clyde.			237,000	332,000	389,000
Wear.			140,000	148,000	212,000
Tyne .		•	149,000	177,000	208,000
Various	•	•	180,000	203,000	385,000
Total	١.	•	706,000	860,000	1,194,000

The new vessels finished in British yards in 1882 represented a carrying-power of 5 million tons, being four-fifths

# SHIPPING.

steamers. The world builds about 1,800,000 tons of registered shipping per annum, or 9 per cent. on the tonnage affoat, of which Great Britain builds two-thirds, viz.:—

i	Tonnage B	uilt in 1882.	Ratio.		
	Nominal.	Carrying- power.	Nominal.	Carrying- power.	
British	1,194,000 281,000 330,000	5,040,000 1,080,000 890,000	66·0 15·6 18·4	72·0 15·4 12·6	
Total .	 1,805,000	7,010,000	100 0	100.0	

The shipping lost or broken up yearly averages 1,200,000 tons, with a carrying-power of 1,800,000 tons. The net increase of carrying-power in 1882 exceeded 5 million tons.

# N.—Registered Shipping of Ports.\*

Tonnage, Thousands Omitted. Ratio of Carrying Power. 8.6 Carrying Power. Sail, Steam. Total. 1,080 520 3,680 1,600 Liverpool . 620 350 570 380 1,190 730 London 3,470 8.1 Glasgow 2,250 5-2 New York . 530 210 740 220 1,580 3.7 2.0 1.8 Marseilles . 60 160 860 Hull . 150 40 190 790 140 200 220 210 Newcastle . 60 760 660 1.8 110 Sunderland 110 490 1.1 Hamburg . 140 70 Bremen 60 220 460 1.1 Greenock . 0.9 170 40 210 370 San Francisco Philadelphia 110 50 50 160 360 **0.8** 110 160 360 ŏ.8 0.8 0.7 60 60 90 80 330 320 Trieste 30 20 Leith. 50 10 Havre 320 70 120 0.7 New Brunswick 270 280 320 07 40 30 50 Barcelona . 140 300 0.7 Genoa Odessa 120 270 20 70 270 9.0 60 Amsterdam 100 260 0.6 80 240 230 Ŏ.Ş 40 30 Copenhagen 70 0.5 Southampton 210 Antwerp . 10 50 0.2 Aberdeen . 100 20 120 200 0.2 20 Bergen 60 80 160 0.4 Yarmouth 160 160 160 0.4 10.372 2,634 13,006 23,471 54.4 Other ports 5,644 15,002 20.646 43,151 100-0 The World

<sup>\*</sup> For tonnage trade of ports see Entries and Ports.

# O.—DECLINE OF AMERICAN CARRYING TRADE. Imports and Exports, Millions £, United States.

Year.			Americ	n Flag.	Foreign	a Flags.		American		
Y	ear	•		Imports.	Exports.	Importa.	Exports.	Total.	Ratio, per Cent.	
1860	•		_	48	58	28	25	159	67	
1870 1880	•	•	•	29 34	38 24	59 121	64 152	190 331	35 17	
1882			•	30	21	125	144	320	16	

SHOT AND SHELL.—One million take 10,000 tons of iron. Great Britain sometimes makes 2 millions in a year. SICK.

# A.—RATIO OF SICK.

# Per 1000 Persons.

			26	English rural .				53
			43		•			60
•	•	•			•	•		53
•	•	•			•	•	•	52
•	•	•	70	Russian army	•	•	•	78
	:			43 45 69	Town population Jamaica garrison Solution Application	Town population Jamaica garrison Navy at Malta		43 Town population

The English rural and town population, of course, include all ages, whereas the troops, navy, &c., are usually men in the flower of life.

# B.—SICK POPULATION.

						Percentage
			Sick.	Invalids.	Total.	of Pop.
England .			984	492	1,476	5.7
Scotland .			145	72	217	5.7
Ireland .			180	90	270	5.3
United King	rdom		1.309	654	1,963	5.6
France .			1,682	841	2,523	67
Germany .		·	2,288	1,144	3,432	7.6
Austria .			2,360	1,180	3,540	9.4
Italy			1,672	836	2,508	8-9
Spain			990	495	1,485	8-9
Belgium .			242	121	363	6.6
Holland .			190	95	285	7.1
Denmark .			76	38	114	5.7
Sweden and N	orwa	ν.	214	107	321	4.9
Switzerland		٠.	126	63	189	6.7
Greece .			62	31	93	5.8
United States			1.978	989	2,967	5.5
Australia .	•	•	75	37	112	4.1
Total ,			13,264	6.631	19.895	7:5

The above table is not official, but computed on Dr. Farr's basis applied to death-rate. It includes all ages, as shown for England in Table E.



## SICK.

# C.—Dats of Sickness per Inhabitant. Annual Average.

					1845.	1870.				
^	ge.			Urban.	Rural.	England.	Scotland.	Urban.	Rural.	England.
21-30 31-40 41-50 51-60	:	:	:	6:3 11:4 13:4 23:2	6.0 6.4 9.0 17.8	6·1 8·9 11·2 20·5	6·0 6·2 9·5 19·9	5.6 7.1 11.2 20.3	5·4 7·1 10·4 20·1	5·5 7·1 10·8 20·2
40 ye	ear	١.		13.8	9.8	11.7	10.4	11.1	10.7	10.9

## D.—Cost of Sickness, per Annum.

		Millions	Days per	Loss of	Loss of Labour.		
		of Days.	Inhab.		Per Inhab.	to Income per Cent.	
England .		281	10.8	31	24s.	3.0	
Scotland .		40	108	3	20	3·0	
Ireland	•	51	10.1	2	8	2.8	
United Kingdo	om	372	10.6	361	21s.	3.0	
France		474	12.6	34	18	3.5	
Germany .		662	14.4	33	15	3.9	
Russia		1,680	20.7	42	10	5.2	
Austria		<b>688</b>	18.0	30	16	50	
Italy		460	16.8	13	9	4.5	
Spain		272	16·8	8	10	4.2	
Belgium .		68	12.4	4	15	3.5	
Holland .		53	13.4	4	20	36	
Denmark .		21	10.8	11	15	3.0	
Sweden and Nor	wav	59	9.3	2₹	8	2.5	
Switzerland .		34	12.6	11	11	3.5	
Greece	•	19	11.0	1	10	3 1	
Europe .		4.862	15.0	211	14	39	
United States		540	10.5	41	16	2.9	
Australia .	•	23	7.9	3	20	2.2	
Total .		5,425	14 2	255	14	3.6	

# The above table does not include children.

# E.—SICKNESS IN AGES, ENGLAND.

Age.			Number Sick.	Per 100 Inhab,	Aliquot Parts.
Under 5			566,000	16.2	38.4
5 to 20	•	:	114,000	1.4	7.7
20 ,, 50			276,000	2.8	18.7
50 ,, 60			129,000	6.8	8.8
60 ,, 70			149,000	12.4	10.1
Over 70	•		242,000	<b>3</b> 3·1	<b>16·3</b>
Total			1,476,000	5:7	100.0

413

414 SILK.

The ratio of sickness rises and falls regularly with deathrate in all countries, as shown by Dr. Farr and Mr. Edmonds at the London Congress of 1860, when the following rule was established:—

Of 1000 persons, aged 30, it is probable 10 will die in the year, in which case there will be 20 of that age sick throughout the year, and 10 invalids.

Of 1000 persons, aged 75, it is probable 100 will die in the year, in which case the sick and invalids of that age will be 300 throughout the year.

For every 100 deaths, let there be hospital beds for 200 sick, and infirmaries for 100 invalids.

#### SILK.

# A.—Production of RAW SILK.

<del>-</del>							Thousand	Thousands Omitted		
China							lbs. 8ilk. 21,000	Value. £14,500		
Japan	•		•	•			4,400	4,100		
Italy .							6,600	6,600		
India and	Persi						2,000	1,500		
France				•			1,200	1,200		
Turkey, S	pain,	&c.,	•	•	•	•	2,800	2,500		
			To	tal			38,000	£30,400		

#### B.—Italian Silk Industry.

Italy imports yearly 90 per cent. of the eggs from which her silk crop is obtained.

1 oz eggs. value 7s., produces 35 lbs. cocoons, or

2½ lbs. silk.	produces	30 10	<b>s.</b> co	COOM	, or	
70 tons eggs at 7s. pe	r oz. cost			<b>^</b>		£880,000
39,000 tons cocoons worth .	produce s					£5,600,000
6.03 A.T. 11	Profit					£4,720,000
Silk of Italian eggs		•	•	•	•	1,030,000
	Total					£5.750.000

# C .- French Silk Industry: Annual Averages.

		ilk, Lbs. Cor cusands Omi		Value, Thousands Omitted.		
	Native.	Imported.	Total	Manufac.	Consump.	Exported
1830-32 1842-46	1,620 2,770	1,140 4,070	2,750 6.840	£5,230 12,700	£3,920 7,440	£1,310 5,260
1850-52 1868-73	3,830 1,200	6,370 15,400	10,200 16,600	18,220 34,600	9,500 16,240	8,720 18,360
1877-82	1,400	13,800	15,200	27,400	15,300	12,100

# SILVER.

# D.—ALL NATIONS.

		Thousands Omitted.							
	Annual C Raw Si	Annual Consump, Raw Silk, Lbs.		Consump.	Consump., Shillings per Inhabitant.				
	1861-65.	1876-80.	Value 1881.	Value 1881.	THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE S				
Great Britain	5,500	2,900	£6,800	£15,600	8.8				
France	12,300	15,200	27,400	16,200	8.6				
Germany	2,100	3,400	4,500	6,000	2.8				
Russia	560	1,040	2,100	2,400	0.6				
Austria	1,030	2,100	3,800	6,000	3.2				
Italy	1,300	1,600	3,100	3,000	2.2				
Switzerland	100	300	3,400	400	2.8				
Spain	350	400	700	900	1.1				
Belgium	220	480	900	1,400	51				
Europe	23,460	27,420	£52,700	£51,900	3.3				
United States	450	1,820	5,500	12,100	4.5				
China	9,000	9,000	15,000	11,200	404				
Total	32,910	38,240	£73,200	£75,200	7400				

# SILVER.

# A.—Production in 500 Years,

<b></b> .		Tons.	Million &.	Ratio.
Mexico		78,600	608	<del>4</del> 0·7
Peru, &c		72,000	554	37.3
United States		11,600	89	6.0
Germany .		8,470	65	4.4
Austria		7,930	61	4.1
Russia		3,200	24	1.7
Various	•	11,200	86	5.8
		193,000	1.487	100.0

# B.—Periods of Production.

A.D.	Tons.	Increase Period. Tons.	Value of Stock. Million £.	Per Ton.
1600	22,800	_	370	£16,000
1700	60,000	37,200	750	12,500
1800	117,000	57,000	1,120	9,600
1850	150,000	33,000	1,350	9,000
1880	193,000	43,000	1,487	7,700

# C.—Production since 1850.

# Million £.

Spanish America . United States Germany and Austria Various	•	1851-60. 49 10 15 7	1861-70. 64 16 18 12	1871-80. 70 68 20 22	30 years, 183 94 53 41
Total .		81	110	180	371

#### D.—PRODUCTION AND CONSUMPTION.

₽.	I MODUCIACI		COLIDOMI IZOLII
		(	Consumption, Tons.

Years. 1831-40 1841-50 1851-60 1861-70 1871-80	:	:	Production, Tons. 5,965 7,804 8,955 12,201 22,345	Coinage. 2,700 4,800  1,200	Manufac- ture. 2,000 2,200 2,700 3,100 4,500	The East. 2,200 2,400 11,300 12,300 10,800	Total. 6,970 9,490 14,140 15,400 16,500
Total		•	57,270	8,700	14,500	39,000	62,500

#### Consumption, Million &.

Years,			1	Production, Million £.	Coinage.	Manufac- ture.	The East.	Total
1831-40				54	24	18	20	62
1841-50				70	43	20	22	85
1851-60				81	•••	24	102	126
<b>1861-70</b>				110	•••	28	111	139
1871-80	•	•	•	180	10	36	87	133

The above table shows that since 1830 the supply has not been sufficient, the world melting down 5,230 tons of old candlesticks, &c., for current uses.

For silver-movement since 1860 see Bullion.

#### E.—Production in 1882.

United States .			Tons. 1,010	Value. £7,770,000	Ratio. 48.8
Spanish America	:	:	740	5,720,000	35.7
Germany		Ċ	150	1,160,000	7:3
Austria			82	620,000	4.0
Various			85	650,000	4.2
Total .			2,067	£15,920,000	100 0

#### F.—PRICES SINCE 1501.

Period.	Per Oz., Pence.	Ratio to Gold.	Period.		Per Oz., Pence.	Ratio to Gold.
1501-60	85	11.1 to 1	1801-40		60±	15.7 to 1
1561-1620 .	80	11.8	1841-60		60¥	15.4
<b>1621-80</b>	65	14.5	1861-70		60 <u>I</u>	15.6
1681-1740 .	62	15.1 .,	1871-80		56	16.7
1741-1800 .	63	14.8 ,,	1885 .		474	19.6 ,,

In 1876 the price fell to  $46\frac{1}{2}$  pence, say 20 per 1 as compared with gold. In 1873-79 the German Government sold 3220 tons of silver coin for £28 $\frac{1}{4}$  millions.



#### SLAVES.

#### SLAVES.

# A.—Emancipation in British Colonies (1834).

		Number.	Indemnity.	Per Head.
Jamaica		311,700	£6,152,000	£20
Barbadoes		83,000	1,721,000	21
Trinidad		22,300	1,039,000	50
Antigua, &c		172,093	3,421,000	20
Guiana		84,900	4,297,000	53
Mauritius		68,600	2,113,000	31
Cape of Good Hope	:	38,400	1,247,000	33
Total		780,993	£20,000,000	£26

## B .- SLAVERY IN UNITED STATES.

Year.			Number.	Ratio to Population, per Cent.	Year.		Number.	Ratio to Population,
1790 1800	•	•	697,900 893,040	18 17	1830 . 1840 .	•	2,009,030 2,487,500	per Cent. 16 15
1810 1820	:		1,191,400 1,538,100	16 16	1850 . 1860 .	:	3,204,300 3,979,700	14 13

The war of emancipation cost 655,000 men killed, and an outlay of 555 millions sterling, or £140 per slave.

## C.—SLAVERY IN BRAZIL (1876).

Slaves.	Population.	Blave, Ratio, per Cent.
370,400	2,039,000	· 18
341,600	1,057,700	32
167,800	1,380,000	12
156,600	837,400	19
89,100	841,500	11
74,900	359,100	21
	434,800	16
242,600	2,980,900	8
1,510,800	9,930,400	15
	370,400 341,600 167,800 156,600 89,100 74,900 67,800 242,600	370,400 2,039,000 341,600 1,057,700 167,800 1,380,000 156,600 837,400 89,100 841,500 74,900 359,100 67,800 434,800 242,600 2,980,900

There were 805,000 male and 706,000 female slaves held by 41,000 owners, averaging 37 to each owner. In 1882 the total number of slaves was 1,300,000, representing a market value of 104 millions sterling. It is expected there will be no slaves remaining in 1900.

#### D.—SLAVES OF ANTIQUITY.

Greek labourer . , tanner . , cutler . , boatman . Roman gardener . , carpenter	Day's Wages. 6d. 10d. 8d. 6d. 8d.	¥56 103 77 60 65 148	Roman	blacksmith shepherd. baker. cook. actress. physician	Day's Wagos. 20d. 6d. 19d. 	Value. £145 51 140 430 820 1100
,,			• ••	F-7	2 D	

Some of the wealthy Romans had as many as 10,000 slaves. The minimum price fixed by law was £16, but after great victories they could sometimes be bought for a few shillings on the field of battle.

#### SMALL-POX.

# A .- DEATHS PER MILLION INHABITANTS, PER ANNUM.

England.		London Scot		Scotl	and.	Ireland.	
Date.	Deaths.	Date.	Deaths.	Date.	Deaths.	Date.	Deaths
	l	1660-80	4,170				
1760-1800	3,000	1760-90	2,260				
1840-54	430	1840-60	408			1844	403
1871-73	178	1871-73	1,040	1864	305	1864-74	108
1881	100	1881	640	1874-82	28	1875-82	82

In the epidemic of 1861 the deaths in England were per million: army, 455; civilians, 928; London, 2420. In that of 1881, the returns showed deaths per million inhabitants, as follows:—

			Va	ccinated.	Unvaccinated.	Difference.
London	•			90	3,350	35 to 1
England		_		98	4.380	44 to 1

In the epidemic at Leipsic in 1871, the death-rate was 12,700 per million inhabitants, 70 per cent. of whom were unvaccinated.

#### B .- MORTALITY AMONG PERSONS ATTACKED.

	•	Vaccinated,	Unvaccinated, per Cent.		cinated, er Cent.	Unvaccinated, per Cent.
London		15	45	Boston .	15	50
Montreal		16	54	Philadelphia	17	64

During the Franco-German war the Germans lost only 263 men from this disease, the French 23,499, the former having been re-vaccinated in barracks. In the war in Paraguay, the Brazilians lost 43,000 men from malignant or black small-pox, that is, 35 per cent. of their army, nine cases in ten proving fatal.

#### C.—SMALL-POX IN LONDON.

Period.	Deaths from Small-pox per Annum.	Ratio to all Deaths, per Cent.	Period.	Deaths from Small-pox per Annum.	Ratio to all Deaths, per Cent.
1629-70	. 702	5	1801-20	. 995	51
1671-1700	. 1,353	5 <u>1</u>	1821-30	. 692	31
1701-30	1,834	7₹	1841-60	. 781	1.€
1731-CO	1.967	8	1861-70	. 816	1
1761 1:00	. 2,012	9	1871-81	. 1,620	2



#### SNOW-SOCIETIES.

SNOW.—The most remarkable snowfalls in England have been in the following years:—

1141	1683	1784	1814
1606	1709	1799	1820
1674	1762	1812	1836

The earliest snow of the season was that of October 7, 1829, in the present century. There was no snow from November 1862 till February 1864.

#### SOAP.

#### A.—Exportation (1881).

			Mi	llion Lbs.	Value.
Great Britain				39	£405,000
France .				30	310,000
United States				14	160,000

The manufacture of soap in France averages 255 million lbs., and the consumption almost 6 lbs. per inhabitant, as against 10 lbs. in the United Kingdom.

#### B.—BRITISH SOAP.

Year.				1	Million Lbs.	Consump.	Duty	Price		
I	681	•		Manufac.	anufac.   Consump.   Export		per Inhab., Lbs.	Ton.	Ton.	
1791	,	_	_	48	46	2	3.1	£21	£76	
1801				57	54	3	3.6	21	74	
1811				76	73	3	4.3	21	73	
1821				98	94	4	4.6	28	68	
1831				123	107	16	4.5	28	52	
1841				199	170	29	6.4	14	48	
1851				217	195	22	7.0	14	40	
1861				254	232	22	8.0		27	
1871				302	285	17	9.0		27	
1881			Ĭ	389	350	39	10.0		22	

The duty was removed in 1853, and the increased consumption of soap has probably tended to the reduction in death-rate.

#### SOCIETIES.

ALEARNED S	SOCIETIES OF	LONDON (	(15)	PRINCIPAL	).
------------	--------------	----------	------	-----------	----

Year.		Members.	Year.	•	Members.
1830 .		2.201	1860 .		17.729
1840 .		8,376	1870.		21,920
1850 .	_	15.769	1880.		29.061

There are in the United Kingdom 118 societies, with 66,200 members and an income of £140,000 per annum.

## B.—Principal Societies: Members.

Royal	•	552 807	Geographical . 3,430   Agricultural . Botanical . 1,660   Zoological .	. 7,960 2,000
Archaeological		580	Pharmaceutical 3,250 British Assoc.	. 2,400
			Law 1,530 Social Science	. 1,550

## SODA.—The annual production is (1882):—

Great Brita France . Germany Austria . Belgium, U	: : States,	&c.	:	:	432,000 127,000 101,000 40,000 11,000
Total					711 000

The production in Great Britain has quadrupled since 1850, when it was 104,000 tons.

**SOIL.**—The experiments of Schubler and Schleiden give the power of absorbing water in an area of 50 square inches, as follows, per 1000 grains of soil:—

		Grains Absorbed in							
		12 Hours.	24 Hours.	48 Hours.	72 Hours				
Gypsum		1	1	1	1				
Limestone sand		2	3	3	3				
Loam clay .		21	26	28	28				
Muddy,, .		25	30	34	35				
Calcareous clay		26	31	35	<b>3</b> 5				
Field ".		16	22	23	23				
Slaty marl .		24	29	32	33				
Garden mould.		35	45	50	52				
Humus	•	80	97	110	120				

**SOOT.**—London produces 50,000 tons per annum, worth £41,000, used for manure at 10 cwt. per acre.

#### SOUND.

Cannon at		Heard at	Distance, Miles.	Year.
Waterloo		Dover .	. 180	1815
Cepeda .		Buenos Ayres	. 160	1859

The Cepeda cannonade was heard at Luxan, in the province of Buenos Ayres. Mr. Glaisher, at 2 miles from the earth, heard a musket-shot and a dog bark, and at 4 miles a railway train.

SOUNDINGS. See Sea.

SPECIE. See Bullion, Gold, Silver.

## SPINDLES—SPIRITS.

## SPINDLES.

		Tho	usands Omi	tted.		No.
	Cotton.	Wool.	Flax, &c.	Silk.	Total.	per 10 Inhab
United Kingdom	40,200	5,520	1,370	1,080	48,170	138
France	4,800	3,010	762	2.005	10,577	28
Germany .	5,390	2,830	318	950	8,488	19
Russia	3,360	610	145	360	4.475	6
Austria	2,220	480	343	420	3,463	9
Italy	930	210	50	400	1,590	6
Spain	860	260		100	1,220	8
Belgium	800	820	340	100	2,060	37
Holland	130	100	100	***	330	8
Scandinavia .	340	160	50		550	7
Switzerland .	1,620	200	10	430	2,260	80
Europe .	60,650	14,200	3,488	5,845	83,183	27
United States	11,140	3,300	80	550	15,070	30
India	1,470	***	830	150	2,450	1
Total	73,260	17,500	4.398	6,545	100,703	17

# SPIRITS.

# A.—Consumption per Annum.

England . Scotland . Ireland . U. Kingdom France	34,200	Gallons per Inhab. 0'84 2'35 1'29 1'06 0'90	Gallons, Thousands. Austria	0·80 0·30 0·20 2·60 4·30
Germany .	59,600	1·33	Swod. & Nor. 27,000	4·20
Russia	178,000	2·20	U. States . 76,000	1·50

# B.—Consumption in United Kingdom.

Year.		Gallons, T	housands	Gallons per Inhabitant.				
	England.	Scotland.	Ireland.	U. King.	Eng.	Scot.	Ire,	U. King
1800	4,350	1,280	1,330	6,960	0.51	0.74	0.26	0.45
1810	4,790	1,750	4,730	11,260	0.48	0.97	0.80	0.62
1820	4,280	1,860	3,300	9,450	0.35	0.92	0.49	0:45
1830	7,730	6,010	9,005	22,745	0.55	2.60	1.15	0.95
1840	8,280	6,180	7,402	21,862	0.52	2.40	0.90	0.80
1850	9,330	7,120	7,410	23,860	0.52	2.43	1.12	0.88
1860	12,910	7,890	6,400	27,200	0.65	2.62	1.10	0.95
1870	14,630	8,580	8,300	31,510	0.67	2.56	1.55	1.01
1881	21,600	8,800	6,610	37,010	0.84	2.35	1.29	1.06

421

## C .- MANUFACTURE OF SPIRITS IN ENGLAND.

Year.	Gallons, Tuousands,	Duty, Pence.	Gallons per Inhab.	Year.	1	Gullons, Thousands.	Duty, l'ence.	Gallons per Inhab.
1700 .	. 1.210	4	0.22	1820		4.315	120	0.36
1720 .	. 2,530	4	0.42	1830		7,680	90	0.55
1740 .	. 6,715	4	1.10	1850		9.6.0	90	0.24
1760 .	. 2,320	30	0.33	1860		12,910	90	0.65
<b>1780</b> .	. 2,330	30	0.32	1870		11,220	120	0.48
<b>1800</b> .	. 4,410	60	0.50	1881		16,930	120	0 65

#### D.—FLUCTUATIONS OF CONSUMPTION.

#### Gallons per Inhabitant.

			1830.	1840.	1850.	1860.	1870.	1881.
United King	dor	n	0.95	0.80	0.88	0.95	1.01	1 06
France .	,		0.26	0.33	0.39	0.21	0.60	0 90
Germany .			•••	0.60		1 68	•••	1 33
Russia.			5.00	•••	3.70	4.80		2-20
Sweden .			8.80	8.00	8.40	6.00	4.60	4-25
Denmark .				7.20		5.80		4:30
Belgium ,	,		0.96		1.26		1 90	2.40
United State	8		5.55	3.10	2.50	2.10	1.62	1 50

**SPONGES.**—On the coast of Syria 300 boats with 1500 divers pick up annually sponges worth £25,000; best, worth 40 shillings, inferior, 4 shillings per lb. Depth, 30 to 150 feet.

#### SQUARES.

Name.		City.		Acres.				cres.
Grosvenor .		London		10	Bellecour	Lyons		32
Parade		Vienna.		15	St. Stephen's.	Dublin		40
Schloss					•			

**SQUIRRELS.**—There are 25 millions killed annually in Russia for their skins.

STAMPS. See Finances, Table G.

#### STARVATION.

# Deaths from Hunger in England.

		•	1879.	1880.
Mules .		•	188	184
Females	•		124	102
Total			312	286

The coroners' inquests for London show 80 deaths yearly from hunger, without counting persons who commit suicide in extreme want.

STATIONERY OFFICE (UNITED KINGDOM).—The cost is £570,000 per annum; viz., "blue-books," £64,000; clerks, £108,000; Gazette, &c., £398,000 per annum.

STATURE. See Anthropometry.

## STEAM.

# A.—THE WORLD'S HORSE-POWER.

Year.					Thousand	s Omitt	Percentage.			
10	DELT.			Fixed.	Railway.	Ships.	Total.	Fixed.	Railway.	Ships.
1840.			_	1,290	960	106	2,356	55	41	4
1850 .				1,780	4,190	340	6.310	28	66	6
1860.				2,450	7,900	1.050	11,400	22	69	9
1870 .				3,650	13,700	2,190	19,540	19	70	11
1880 .				7,415	17,618	3,891	28,924	25	61	14

# B.—Owners of Aggregate Power.

_			Horse-	Ratio to Total.					
Year.			G. Britain.	Continent.	U. States.	Total.	British.	American	
1840	_	_	850	352	1.154	2,356	36	49	
1850			2,320	1,990	2,000	6,310	37	32	
1860			3,100	4,220	4,080	11,400	27	36	
1870			4,780	8,980	5,780	19,540	46	30	
1880			7,780	12,992	8.152	28,924	45	28	

# C.—Number of Engines (1880).

		Stationary.	Rullway.	Ships	Total.	Ratio
United Kingdon	n	110,000	13,48Ŏ	5,247	128,727	33.7
France .		37,805	7,031	387	45,223	11.8
Germany .		55,054	9,850	266	65, 170	17:1
Russia .		8,946	3,560	227	12,733	3.3
Austria .		9,160	3,580	81	12,821	3.3
Italy		4,459	1,540	119	6,118	1.6
Spain		2,300	1,320	324	8,944	1.0
Portugal .		140	220	23	383	0.1
Switzerland		1,500	1,000	20	2,520	0.7
Belgium .		11,942	1,080	34	13,056	3.4
Holland .		5,738	540	94	6,372	1.7
Scandinavia	•	3,000	1,100	575	4,675	1.2
Europe .		250,044	44,301	7,397	301,742	78-9
United States		60,300	17,815	1,779	79,894	21.1
The World		310,344	62,116	9,176	381,636	100.0

# D.-Horse-Power of Nations (1880).

		Thousand	Ratio	Horse-		
	Fixed.	Railway.	Ships.	Total		Per 1000 Inhab,
Great Britain .	2,200	3,400	2,180	7,780	26-9	220
France	906	2,387	220	3,513	12.1	97
Germany .	1,321	2,860	144	4,325	14.9	96
Russia	0.27	1,070	58	1,365	4.8	17
Austria .	137	1.075	48	1,280	4.4	30
Italy	54	377	49	480	17	18
Spain	.   48	330	105	483	17	30
Portugal	3	55	- *** 8	66	0.2	16
Switzerland	48	228	5	281	0.9	101
Belgium	382	181	32	595	2.1	iiō
Holland .	60	90	66	216	0.7	54
Scandinavia .	40	220	156	416	1.4	48
Europe	5,456	12,273	3,071	20,800	71.8	67
United States .	1,987	5,345	820	8,152	28 2	158
The World .	7,443	17,618	3,891	28,952	100 0	80

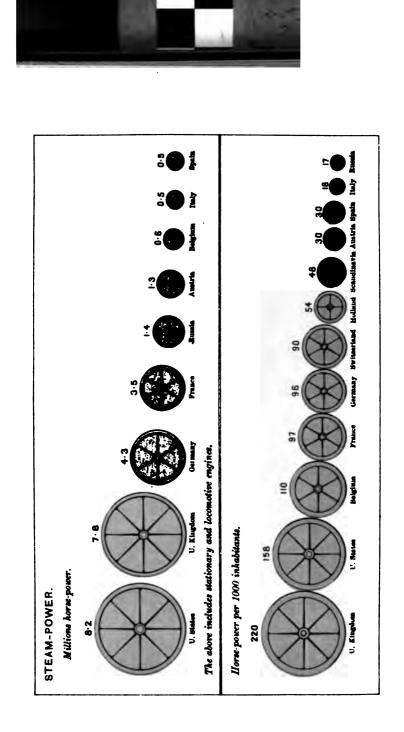
#### E.—STEAM LOCOMOTION.

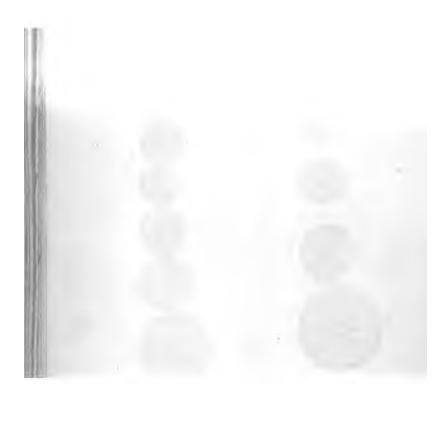
		Railway	s, Miles.	British	Steame	Britis		
Ye	ar.		The World.	British Empire.	Ratio, per Cent.	All Flags.	British.	Ratio, per Cent
1830	_	-	878	220	25	28,400	21,600	75
1840			5,231	838	16	116,000	95,000	82
1850			24,490	6,853	28	392,000	188,000	48
1860			67,069	13,639	20	820,000	502,000	61
1870		-	130,170	24,172	18	1,918,000	1,203,000	62
1880		:	230,238	39,221	17	5,644,000	3,108,000	55

# F.-REMARKABLE STEAMSHIPS.

Name.	T	ons, Gross.	Horse-power.	Speed, English Miles per 24 Hours.
Bervia		7,800	1,000	440
Alaska		6,932	1,800	467
Parisian		5,359	800	384
Arizona		5,147	1,200	438
Germanic		5,009	760	410
Britannic		5,004	760	410

The "Times" of July 18th, 1883, had an announcement that Messrs. John Elder & Co., of Glasgow, were building two steamers for the Cunard line, Liverpool to New York, with these dimensions: length 500 feet, beam 57 feet, depth 40 feet, each being 8000 tons and 1300 horse-power. See Passages.







#### STEEL.

# STEEL.

# A.-Tons Made.

			Thou	tted.	Ratio	
Great Brit United Str Germany France Austria Russia Belgium Sweden	:	: :\ :}	1850. 49	1870. 245 64 170 94 22 9 10 6	1881. 1,780 1,374 865 418 176 296 135 37	in 1881, 35 0 27 0 17 1 8 3 3 4 5 8 2 7 0 7
Total		•	71	620	5,081	100 0

# B.-Works and Converters in 1881.

				Works.	Converters.	Capacity,
Great Britai	n			23	116	2,500
United State	8			20	36	2,200
Germany		•		23	81	1,300
France .			•	10	23	500
Russia .				5	24	350
Belgium	•	•	•	. 4	18	380
Sweden	•		•	10	35	100
Total				95	333	7.330

# C .- EXPORTS OF STEEL, TONS.

_		Export	ed from	Value
Year.		G. Britain.	Germany.	per Ton.
1860		15,000	1,270	£35
1865		31,000	2,400	33
1870		46,000	36,000	32
1875		155,000	122,000	36
1881		894,000	351,000	11

# D.—Tensile Test of Steel.

# Bar 8 inches long.

8q. Inch Section, 1 0000 -9799 -9331 -8741	8train, Tons per 8q. Inch. 13 93 16 96 23 43 27 23			Strain, Tons per Sq. Inch. 28:35 27:32 25:05	Extension, Inches. 1'40 2'00 2'20
Elastic limit Maximum st Breaking los		17:40 tons. 28:35 ,, 25:05 ,,	Cohesion . Extension . Contraction	27	l tons.
AL 1 .			1. 1		

Taking the strength of Swedish iron at 100, the tensile strength of steel compares thus:—

Swedish iron		100	1	Cannon steel		173
Boiler steel		118	-	Spring steel		202

A bar of chrome steel, half-inch squared and 5 inches long, gives a strength of 141,000 lbs. per square inch, being 37 per cent. more than carbon steel.

The nominal strength of steel is 30 tons per square inch, but Professor Siemens shows that it is really 36 tons.

#### E.—Transverse Strain.

A steel bar, 1.02 inches square and  $4\frac{1}{2}$  feet long, gives the following results:—

Weight.		Deflection,	Weight,		Deflection,
Lbs.		Inches,	Lba.		Inches.
50		1065	500 .		· <b>6</b> 11
100	•	·118	1,000 .		1.266
200		-240	1.400 .		2.746

#### F.—FRENCH ADMIRALTY TESTS.

#### Minimum Breaking Load.

Iron Plates.		Lbs.	Steel Plates, Inch.	Lbs.
Common		52	0·16 to 0·24	101
Better		62	0.24 ., 0.80	99
Best .		64	0.80 ,, 1.20	97

The plates supplied by Messrs. Cammell of Sheffield, for 7 French ironclads, were subjected to 36,000 foot-tons of energy, viz.:—

Shot, 760 lbs.; charge, 150 lbs., fired from a 12-inch gun, with velocity 1425 feet per second; range, 264 feet.

The plates in question were 11 feet long and 7 feet wide, by 18 inches thick.

#### G.—Steel Shipbuilding.

# On the Clyde.

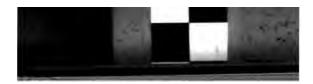
		Tons.			Tong.
1879		18,000	<b>1881</b> .		67,000
1880	•	42,000	1882 .	•	108,000

At the end of 1882 there were 143,000 tons of steel vessels on the stocks, the largest being the Oregon, 7400 tons. A steel ship can carry 20 per cent. more than one made of iron.

# II.—Steel for Railways.

## Consumption, Tons per Annum.

United States . Great Britain .	٠	New Lines, 1,200,000 60,000	Renewal, 900,000 160,000	T. tal 2,100,000 220,000
Continent, &c.	•	680,000	653,000	1,335,000
Total .		1,940,000	1,715,000	3,655,000



# STILL-BIRTHS-STORMS.

Three-fourths of the steel annually produced is for rail-ways, the lines working in December 1882 being estimated as follows :-

427

Steel Iron	:		:	:		Miles. 110,000 140,000	1	ns Raila, 4,400,000 0,000,000
1	otal	•		•		250,000	3	4,400,000
					)	files.	Tons Rails.	Tons per Mile.
Unite	ed St	ates			108	5,000	12,000,000	115
Great	Bri	tain			18	000	3,300,000	180
Other	r cou	ntrie	<b>s</b> .	•	127	,000	19,100,000	150
7	otal				250	,000	34,400,000	137

The life of an iron rail is 16, that of a steel one 40 years. Steel sleepe's cost £100 a mile less than creosoted timber.

#### STILL-BIRTHS.

## A .- In Order of Months, Ratio.

January		•	106	May .				September			89
February	•	•		June.	•	•		October	•		100
March.	•	•		July .	•	•		November	•	٠	101
April .	•	•	100	August	•	•	96	December	•	•	107

#### B.—Per 1000 Births.

France			Italy.		31	Sweden .	29
Germany		41	Holland		43	Norway .	35
Austria		25	Belgium		45	Switzerland	44

The ratio in France from 1830 to 1845 was only 30 per 1000.

STORMS.—The most destructive in the United Kingdom have been :-

1703, November 27th.—Damage in London, £2,000,000. On the coast 12 war-ships sunk, and 1800 men lost.

1775, October 29th.—Almost equal to the above. Houses blown down and ships sunk.

1839, January 6th.—Many houses blown down at Liverpool and Dublin, and 200 persons killed at Liverpool.

1859, October 25th.—Great loss of shipping, including

the "Royal Charter," near Holyhead.
1879, December 28th.—Tay Bridge blown down; loss of 90 lives. See Wind-pressure.

#### STRAW.

Production, Mutions of Tons.									
United Kingdom France Germany Russia	10 Austria 17 Italy 16 Spain 42 Belgium		14 Holland . 7 Denmark . 7 Sweden . 2 United States	. 1 . 2 . 2 . 20					

# STREET ACCIDENTS. See Cahs.

#### STRENGTH.

# A .- COMPARATIVE SCALE.

Ordinary man .		100	Farnese Hercules .		362
Byrou's Gladiator.		173	Horse	•	750

# B.—Tensile and Transverse.

A crushing force of 1000 per square inch on a bar 1 inch square and 12 inches long gives the following ratios of strength:—

			Tensile.	Transverse.		Tensile.	Transverse.
Stone			100	10	Cast iron	158	20
Glass	•	•	123	10	Timber	1,900	85

See Steel and Metals.

#### SUGAR.

# A .- PRODUCTION, THOUSANDS OF TONS.

*Germany	606	Russia	240	French colonies 105
Cuba	520	Java	190	United States . 90
*Austria	460	Manilla	180	Egypt, &c 285
*France	390	Brazil	150	Egypt, &c 285 All beet 1,811
British colonies	340	*Holland, &c	115	All cane 1,860

The above is for 1880, but the crop of 1885 exceeded two million tons cane and  $2\frac{1}{2}$  millions beet sugar.

#### B.—Consumption: All Nations.

	Tons, Thousands.	Lbs. per		Tons,	Lbs. per
United Kingdom		68	Spain and Port.		5
	260	21			16
	. 430	21	Scandinavia	. 90	22
Russia	. 240	7	United States	. 990	43
Austria .	. 240	14	Colonies .	. 65	
Italy	. 90	7	Total .	. 3,670	•••
France . Germany . Russia	. 360 . 430 . 240 . 240	21 21 7	Belg. and Holl. Scandinavia United States Colonies	. 70 . 90 . 990	22 43

<sup>\*</sup> Beet sugar: the rest cane.

As a general rule the consumption of sugar per inhabitant is regarded as an indication of the public wealth. The increased consumption in Great Britain has kept pace with the growth of wealth and income (q.v.)

#### C.—Consumption in Great Britain.

Year.	Tons.	Lbs. per Inhab.	Duty per Ton.	Price per Ton.
1705	12,000	3	£3	£70
1730	41,000	9	4	70
1750	53,000	11	5	70
1780	77,000	14	7	70
1801	165,000	22	20	85
1811	184,000	23	27	90
1820	143,000	15	27	63
1830	214,000	20	24	49
1840	188,000	15	24	48
1850	<b>3</b> 10,000	25	10	40
1860	420,000	32	13	35
1870	690,000	49	5	32
1881	1,050,000	68	•••	24

About 70,000 tons are annually consumed by brewers.

#### SUICIDE.

#### A.—Average Numbers Yearly.

						Per Million Inhab		
				1851-60.	1871-77.	1851-60.	1871-77.	
England				1,167	1,614	65	67	
Scotland					140	•••	40	
Ireland				•••	90	•••	17	
United Ki	ne	rdom		•••	1,844	•••	56	
France		,	•	3,821	5.440	105	156	
Germany	•	•	:	3,820	5,878	129	143	
Russia	•	•	•	0,020	1.960		25	
Austria	•	•	•	1,305	3,292	45	96	
	•	•	•	1,300		40		
Switzerlar	ıa	•	•	•	544	111	202	
Italy .		•		728	995	31	37	
Belgium				189	388	46	71	
Denmark				424	490	274	280	
Sweden ar	ıd	Norway	٠.	381	485	76	81	
Australia	•	•			233		105	

Among the circumstances keeping pace more or less with the increase of suicide (some or all of which may be part causes) are notable, the increase of railways and commerce, the greater consumption of spirits and flesh meat, the spread of secular education and infidelity, the rapid growth of urban and decline of rural life, the higher ratio of insanity, the increase of wealth, the new system of divorce, and the keener struggle for existence in Europe, owing to the greater density of population.

#### B.—SUICIDE IN CITIES.

#### Average, 1871-80, per Annum per Million Inhabitants.

	04 1 7		420	-	
Naples	34   Turin .		. 150 j	Brussels	271
Rome	74 Berlin .		170	Vienna	287
London	87 Florence		180	Copenhagen .	302
Genoa	135 Petersbu	rg .	206	Stockholm .	354
New York .	144 Dresden	·	240	Paris	422

The ratio is declining steadily in London, and also in some other cities.

# C.—Decline in London.

Years.		Annual Average.	Per Million Inhab.	Years.			nnual verage.	Per Million Inhab.
1841-50.		. 231	107	1861-70 .	•		268	88
1851-60.	٠	. 257	100	1871-80 .		•	305	85

#### D.—Increase in France.

France.					Paris.				
Years.		_		Per Million Inhab.	Years.	_			Per Million Inhab.
1830				51	1820-30				488
1850			•	103	1831-40		•		549
1860				112	1841-50				573
1870				133	1851-70				412
1880				178	1871-80				422

In 5 years ending 1880, no fewer than 238 children, under 15 years, committed suicide in France.

# E.—Suicide according to Sex.

	Perc	entage.			Percentage.		
	Male.	Female.		•	Male.	Female.	
England	. 73	27	Austria .		81	19	
Scotland	. 75	25	Italy		80	20	
Irelaud	. 77	23	Switzerland.		88	12	
United Kingdom	. 74	26	Spain		71	29	
France	. 79	21	Belgium .		81	19	
Germany	. 82	18	Holland .		84	16	
Denmark .	. 77	23	Sweden .		76	24	
Russia	. 79	21	United States		72	28	

# F.-According to Religion.

# Per Million Persons.

	P	rotestant.	Catholic.	General Ratio.
United Kingdom		63	17	56
Prussia		170	52	131
Bavaria		195	69	103
Austro-Hungary		140	90	96
Switzerland .		262	81	202

Legoyt says the Jews have even a lower ratio of suicide than Catholics.



#### SUICIDE.

# G .- According to Condition.

· ·	u.	-ACC	OTED	2210	10 00	MDII	IOM.			
						R	atio.			
					Married.	Un	married		Total.	
France .		_	_	_	46		54		100	
Germany	:	•	:	•	43		57		100	
Belgium		•	•	•	45		55		100	
Italy .	•	•	•	•	44		56		100	
Switzerland	•	•	•	•	43		57		100	
DWIGOTIERO	•	•	•	•	30		01		100	
	Н.	—Ac	COR	DIN	о то S	EASO	NS.			
									-	
77-14-3 Tri3		Spring	g. 15	umt		mn.	Winter.	•	Year.	
United Kingd	om	336		37			228		1,200	
France .	•	335		35			246		1,200	
Saxony .	•	336		36		32	234		1,200	)
Bavaria .	•	340		37			229		1,200	
Austria .		336		37		33	225		1,200	
Spain .		312		45			197		1,200	
Belgium .		331		35			235		1,200	
Denmark .		341		37	4 2	72	213		1,200	)
General avera	ge	333		38	0 26	62	225		1,200	)
Guerry classi	_	the	ratio	o fo	or days	of th	18 W66	k i	•	
Sunday				96	Thursda	▼ .	_	_	_	110
Monday		•	1	106	Friday	•	•	•	•	96
Tuesday				110		•	•	•	•	78
Wednesday.				104			•	•	•	100
" ouncousy			•	LVE	Avera	Ra .	•	•	•	100

# I.—Modes of Suicide: Percentage.

				England.		
Hanging Drowning Poison . Various .	:	:	 Male, per Cent. 35 16 9 40	Female, per Cent. 23 35 21 21	General, per Cent. 32 21 13 34	France, per Cent. 44 29 } 27
			100	100	100	100

# K.—CAUSES OF SUICIDE.

					Europ P	ean Averag er Cent.	ю,
Insanity	•				•	34	
Grief .					•	23	
Drink .				•		15	
Various.						28	
						100	

Caspar estimates 25 per cent. caused by drink in Germany, Brown 12 per cent. in England.

# L-Suicide in Armies.

# Per 100,000 men, per annum.

		Army.	Civilians (Age, 20–60).	Excess in Army.
British		38	` 11	245 per cent.
French		51	20	154 ,,
German		64	25	156 ,,
Belgian		45	10	350 ,,
Austrian		85	15	467
Italian		30	8	275 ,,
Swedish	•	45	12	275

# M .- Suicide in British Army.

# Per 100,000 men, per annum.

Infantry Artillery Cavalry				34	In England In Colonies		34 34 47
Age. U. 20-25 . 25-30 .	King 20 39	)	oni <b>es.</b> 21 33	India. 13 39	Age. U. Kingdom, 30-35 . 51 35-40 . 71	Colonies. 45 81	India. 84 103

#### SULPHUR.

		Export from	Import into	Value
Year.		Sicily,	Great Britain,	per
		Tons.	Tons.	Ton.
1820.		18,500	4,600	£10
1830.		38,100	12,100	8
1840.		77,800	34,400	5
1850.		85,000	33,500	8
1860.		140,000	50,200	9
1870.		173,000	53,300	6
1880.		287,000	46,400	5

The Sicilian sulphur deposits employ 18,000 miners. See Gunpowder.

SUNSTROKE.—Deaths in England from this cause average 213 per million, or 1 in 4700 deaths.

#### ANNUAL AVERAGE.

Year.		)	fales.	Females.	Total.	Per Million Deaths.
1863-70			57	9	66	137
1871-78	•		88	23	111	213

**SWAMPS.**—France has 800,000 acres of swamp, which cause much fever in the vicinity.

SWIMMING.—Captain Webb swam from Calais to Dover in 1877, but was afterwards beaten by William Beckwith in

a swimming match for 90 miles in 60 hours. Lord Byron swam across the Dardanelles.

Swimmer.		Distance.	1	Miles.	Time.
Miss Beckwith	ъ.	London to Greenwich			•••
Miss Parker.		London to Blackwall		7	95 min.
Miss Dicks .		Shoreham to Brighton		6	•••
Miss Saigeman	١.	., ,		••	
Fr. Cavil .		Putney to Blackwall		16	4 hrs.
,, .		Calais to Dover .		23	13 ,,

Miss Beckwith was only 14 years of age when she swam from London to Greenwich (1875),

# T

# TAILORS.

	<b>A.</b> —	-Nu	MBER IN	UNITED KIN	идом (1871)	) <b>.</b>				
			Male.	Female.	Total.	Per 10,0	000			
England Scotland Ireland	:	:	111,800 18,300 18,800	38,000 1,100 1,500	149,800 19,400 20,300	67 59 38	-			
U. King	gdom		148,900	40,600	189,500	60				
B.—Tailors' Wages (1880).  Shillings per Week.										
Great Bri France .	tain •	:	25   Germ 21   Belgi	any 1 um 1	5   Italy . 7   New York	: :	18 58			

# C.—Army-Clothing in England.

 Ordinary Wages, in Pence.

 Tanic
 .
 .
 38 | Frock
 .
 .
 22 | Towels, doz.
 .
 .
 .
 4

 Trousers
 .
 .
 14 | Cap
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .
 .

A good workwoman earns about 4 shillings a-day.

# TALLOW.

#### A .- Consumption in United Kingdom.

1		Tons.		١	Value Consumed.		
	British.	Imported.	Total.	Price, Ton.	Thousands omitted.	Per Inhab.	
1830	33,200	56,600	89,800	£46	£4,140	40	
1840	35,000	56,300	91,300	43	3,910	35	
1850	37,300	62,200	99,500	39	3,880	34	
1860	43,500	71,800	115,300	56	6,440	53	
1870	47,100	77,200	124,300	43	5,330	40	
1881	49,400	59,100	108,500	35	3,800	27	

# B.—Exports of Tallow, Tons.

	From									
	Russia.	U. States.	River Plate.	Australia						
1830	66,400	2,200	8,600	•••						
1860	40,300	14,100	45,300	6,200						
1870	21,100	35,200	62,400	25,300						
1880	10,400	44,300	23,300	32,100						

# C.—Production and Consumption of Tallow in 1882.

			Tons.	_	
	Produc-	Consump- tion.	Surplus	Deficit.	Consumption lbs.
United Kingdom	49,400	108,500	•••	59,100	64
France	40,200	93,400	•••	53,200	54
Germany	56,400	107,300	•••	50,900	5
Russia	116,000	105,500	10,500	•••	21
Austria	42,000	42,000	•••	•••	3
Italy	11,200	11,200	•••	•••	1
Spain and Portugal	11,500	11,500	•••		1 <del>1</del>
Holland	7,000	51,400		44,400	28
Belgium	6,000	15,200	•••	9,200	6
Scandinavia .	16,000	18,000	•••	2,000	41
	<u> </u>				-
Europe	355,700	564,000		208,300	31
United States .	330,000	106,000	224,000	•••	4
Other Countries	60,000	75,700	•••	15,700	•••
	745,700	745,700			

In Russia, Holland, and United States, lard is included.

# TARIFF.

# A .- IMPORT DUTIES, GENERAL AVERAGE.

Ratio to Importa. per Cent.	Shillings. per Inhab.	Ratio to Importa- per Cent.	Shillings per inhab.
United Kingdom 51	12	Belgium . 1	4
France 61	8	Denmark 9	10
Germany 6	4	Sweden & Nor. 12	8
Russia 18	3	Europe 71	44
Austria 5	2	United States . 28	4 <u>4</u> 16
Italy 11	4	Canada 15	13
Spain 24	6	Australia 13	42
Portugal 26	10	Brazil 44	15
Holland 1	2	Argentine Repub. 37	31

#### B.—Duties on English Cotton Goods.

China, Guiana	Per Cent.	Belgium, Greece		Per Cent. 15
India, Queensland .	5	Holland, New Zealand	:	15
Turkey	7	Austria	•	18
Cape, Feejee,	10	Canada		20
Tasmania, S. Australia	10	Victoria, Chili		25
Uruguay, W. Indies .	12	Brazil	•	30
Newfoundland	13	Argentine Republic .		40

# C.—British Tariffs since 1580.

#### Ratio of Duties to Total Imports.

Year.		Per (	Cent.	Year.	Pe	r Cent.	Year.	Pe	r Cent.
1580	•		1	1720		21	1844		40
1614	•	. 1	81	1800		20	1866		10
1684			3 <b>[</b>	1827		46	1881		51

## D .- PRINCIPAL ITEMS OF BRITISH TARIFF.

#### Duties Expressed in Shillings.

			1881.	1834.	1819,	1787.
Bacon cwt.			•••	28	56	47
Books ,,			•••	100	100	20
Butter ,,			•••	20	20	2
Cheese ,,				10	10	14
Cocoa ,,			9	19	280	240
Coffee ,,			14	140	280	224
Cotton ,,			•••	3	9	9
Eggs ,,			•••	6	6	3
Paper ,,			•••	28	94	?
Potatoes ,,		•	•••	2	2	4
Rice ,	Ċ	•	•••	15	15	7
Soap ,				90	90	44
Spirits, gallon			10	22	22	6
Sugar cwt.		•		63	63	27
Tallow	-	•	•••	1	3	•••
Tea ,,	•	•	56	240	224	45
Tobacco ,,	:		392	784	448	392
Wine, gallon	•	:	1	51	14	5
Wool, cwt.	•	•	-	9	56	ŏ
552, 644	•	•	•••	•	50	•

Blanks in the above table signify duty-free. Grain was subject to import-dues on a sliding scale, according to market prices in Great Britain, down to 1846.

# TAXES.

# A.—National and Local Revenues (1881-82).

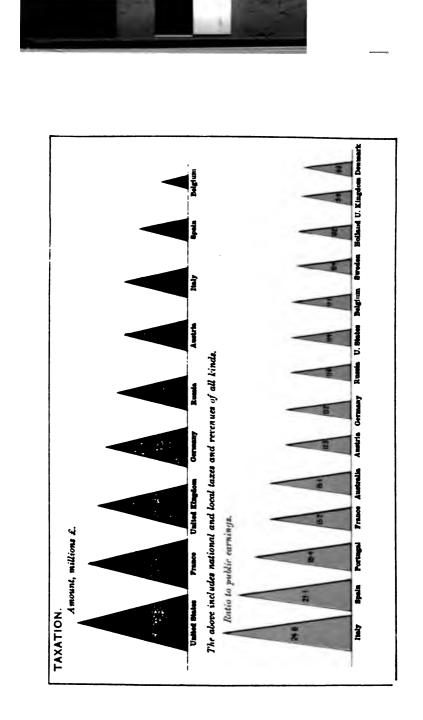
	Tho	usands Omi	itted.	Per Inha-		
	National.	Local,	Total.	bitant, Shillings.	Millions £.	PerCent
U. Kingdom .	£85,682	£38,091	£123,773	71	1,247	10
France	112,205	32,440	144,645	77	965	15
Germany	90,320	13,270	103,590	46	850	12
Russia	73,700	11,200	84,900		760	11
Austria	68,400	5,300	73,700		602	12
Italy	54,200	20,100	74,300		292	25
Spain	31,600	9,100	40,700		188	21
Portugal	6,900	1,300	8,200		45	18
Holland	8,400	2,100	10,500	52	104	10
Belgium	11,400	2,250	13,650	50	120	11
Denmark	2,700	1,330	4,030	41	47	9
Swed.and Nor.	7,020	3,460	10,480		104	10
Europe	£552,527	£139,941	£692,468	44	5.324	13
United States	75,600	84,200	159,800		1,420	11
Total	£628,127	£224,141	£852,268	46	6.744	124

(For British Colonies, Brazil, &c., see Finances.)
The national taxes for Germany include the budgets of Prussia, Bavaria, &c.

# B.—Increase of Taxation in Great Britain and France.

					Thousand	s Omitted.			
Ye	ar.		Un	ited Kingd	om.		France.		
		National.	Local.	Total.	National.	Local.	Total		
1830	_	-	£55,500	£10,820	£66,320	£39,600	£7,100	£46,700	
1840			59,360	10,240	69,600	46,400	8,800	55,200	
1850			55,800	11,050	66,850	55,200	11,700	66,900	
1860			71,100	14,950	86,050	68,500	18,100	86,600	
1870			75,400	24,300	99,700	72,900	21,300	94.200*	
1882	•		85,700	38,100	123,800	112,300	32,400	144,700	
				Shillings	per Inha	hitant.			
1830		•	46	9	55	25	4	29	
1840			45	8	53	27	5	32	
1850			40	8	48	32	7	39	
1860			50	10	60	36	10	46	
1870			48	16	64	40	12	52	
1882			49	22	71	60	17	77	

<sup>\*</sup> The figures are those of 1869, the year before the war.







#### TAXES.

# C.—Taxation compared with Earnings.

			Milli	Per-centage					
Year.		Taxe	tion	Earn	ings.	of Taxes.			
		United Kingdom.	France.	United Kingdom.	France.	United Kingdom.	France.		
1840 . 1869 . 1882 .			55 94 145	540 960 1,247	480 806 965	13·0 10·4 10·0	11·5 11·9 15·0		

# D.-Taxes and Revenues of United Kingdom.

## Thousands Omitted.

		1820.	1840.	1860,	1870.	1880.
Customs		£12,062	£23,658	£24,461	£21,529	£19,326
Excise .		30,140	15,629	20,361	21,763	25,300
Stamps		7,080	7,512	8,044	9,248	11,300
Taxes .		8,870	4.157	12,828	14,544	11,900
Post-Office		1,140	1,393	3,310	4.770	7,770
Sundries		2,342	7,016	2,086	3,580	5,669
National		£61,634	£59,365	£71,090	£75,434	£81,265
Local .	•	9,450	10,240	14,950	24,300	38,100
Total		£71,084	£69,605	£86,040	£99,734	£119,365

# E.—Incidence of Taxation (1880).

	Revenue,	Thousands C	Assessed Incomes.	Incidence of	
England Scotland Ireland	Imperial. £61,316 9,990 8,575	Local. £31,060 3,663 3,368	Total. £92,376 13,653 11,943	Millions & 486 56 36	Taxation. 18.8 24.4 33.2
U. Kingdom	£79,881	£38,091	£117,972	578	20.3

The real incidence of all taxation is better shown by comparison with the people's earnings, viz:—

			Incidence of			
England Scotland Ireland .	:	:	:	Taxation. 92 14 12	Earnings. 1,048 121 78	Taxation, 8:8 11:7 15:4
United	<b>K</b> in	gdon	١.	118	1,247	9.6

The above does not include "sundries," which belong to Imperial revenue.

# F.—Imperial Taxation according to Class. United Kingdom (Thousands Omitted).

	·	/LWC4	41.0		, ( 2 100	-	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		-,.			
				ich.	Mic	idle.	w	orki	ng.		Tota	J.
Excise .			£1	,620	£9.	310	£	16,2	44		£27,	174
Customs				201	6	808		11,2			19,	296
Stamps .			6	,490	5	136			30		12,	
Taxes .				,010	5	025		7	20		12.7	
Post-offic	е.		·	860		380		1,0	60		8,	300
Total .			£17	,181	£32	,659	£	30,0	<b>H1</b>		£79,	881
Ratio			2	1.5	4	0-9	•	37	6		100	)·O
			In			he Ric			R	atio	Taxos	
		Numb	ers.		ixes, isands.	Incor		6	Не		$\sim$	DCOM
England .		966,	^^^		4,190	286		£14				-96
Scotland .	•	121.		£1.	1,816	30		1:				05
Ireland .	•	72,			1,175	14		16				40
Heistig .	٠.	12,			1,110						-	
U. Kingdor	n 1	,159,0	000	£1	7,181	330	)	£14	16	2	5	16
			Inci	dence	on Mi	<b>d</b> dle-cl	a <b>ss</b> .		R	atio '	Taxos	L
	1	Numb	era		xes,	Incor		_	<del></del>		·	_
1111						Million	n £.		He			ncome.
England .		,654,			324	381		£3	6 1	2		70
Ireland .		967,0			3,930	49 34		4 3		2		02
ireland.	•	860,			405			٠ _	13	, z	10	02
U. Kingdor	n 9	,481,	000	£32	2,659	464	:	£3	8	10	7	.03
		I	ncid	ence o	n Wos	rking-c	lass	•	R	tio'	Taxes	
	N	umber	rs.		xes,	Incor		_	<u> </u>	-, -	$\sim$	_
171	_					Million			He			ncome.
England		,490,0			,802	374		£ļ		10		81
Scotland		646,0			,244	46				1		.23
Ireland .	. 4,	228,0	w	č	3,995	36		0	18	9	11	.10

The numbers of each class are determined according to the results of Legacy-returns for 1877 in the three kingdoms. The lightness of taxation on the working-class in England is very remarkable.

456

£1 4 7

6.63

U. Kingdom 24,364,000 £30,041

#### G.—LOCAL TAXES OF ENGLAND AND WALES.

Year.		1	Amount, Thousands Omitted.	Shillings per Iuhab.	Year.		Amount, Thousands Omitted.	Shillings per Inhah
1688	•		£780	3	1813		£8,647	16
1701			1,083	4	1830		9.540	14
1730			1,380	5	1840		8,020	10
1770			1,690	5	1850		8.910	10
1780			2,070	5	1862		12,210	12
1790			2,420	6	1868		16,100	15
1803	•		5,348	11	1880	•	31,060	24



#### TAXES.

# H.—England and Wales since 1817.

# Thousands Omitted. Rates, &c. 1817-40. 1840-61. 1868. 1878. 1881. 1891. 1890. £1,230 £1,410 £1,380 £1,797 £1,821 Poor . . 6,060 5,350 7,498 7,943 7,970 Sanitary, &c. 1,220 3,000 7,220 21,159 22,645 Total . . £8,500 £9,760 £16,098 £30,899 £32,434

#### L-Poor-rates in England and Wales.

Period.			Annual Average.	Rental Valuation.	Poor-rate per &	Poor-rate per Inhab.
1702-14			£910,000	£14,200,000	16d.	41d.
1760-75			1,520,000	24,900,000	15d.	58d.
1783-93			2,050,000	30,300,000	16d.	66d.
1803 .			4,080,000	35,100,000	27d.	107d.
1815 .			6,100,000	53,800,000	27d.	133d.
1816-20			7,310,000	58,200,000	30d.	152d.
1830-35			6,742,000	75,900,000	22d.	116d.
1842-50			5,290,000	90,400,000	14d.	74d.
1851-60			5.510,000			
1861-70			6.740.000			
1871-80						
1880 .			8,015,000	191, 150,000	10d.	74d.
1851-60 1861-70 1871-80	:	-	5.510,000 6,740,000 7,710,000	109,600,000 134,300,000 167,200,000	12d. 12d. 11d.	69d. 77d. 75d.

The above shows only the rates expended on the poor, but the Poor-rate often rose 50 per cent. higher, as it included police and other items. The valuation includes many items of real estate not liable to Poor-rate, and is therefore much higher than the nominal Poor-law assessment, since it is made up thus in millions £: Houses,  $96\frac{1}{2}$ ; lands,  $51\frac{3}{4}$ ; railways,  $24\frac{1}{2}$ ; mines,  $10\frac{1}{4}$ ; gasworks, &c.,  $8\frac{1}{4}$ .

#### K .- POOR-RATES IN SCOTLAND.

		Amount.	Per Pauper.			Valuation Rental.	Poor-Rate per &	Poor-Rate per Inhab.	
1847 .		. £434,000				£10,120,000	10 <del>1</del> d.	37d.	
1857 .		. 599,000	£5	5	0	12,030,000	11 <b>4d.</b>	48d.	
1867 .		. 757,000	6	2	0	16,320,000	11d.	56d.	
1877 .		. 806,000	8	1	0	21,240,000	9d.	54d.	
1880 .		. 849,000	8	5	0	22,330,000	9d.	56d.	

The above is the poor-law valuation.

#### L-Local Taxes in Scotland (1881).

Rates Tolls Loans	:	:	:	Revenue. £2,882,000 1,349,000 1,444,000	Burgh boards . Parochial boards School, &c	:	Expenditure, £2,406,000 1,022,000 2,247,000
Tot	al			£5,675,000	Total .		£5,675,000

Rates average 21 shillings, against 26 shillings in England, per inhabitant, and 31 pence in the £ against 51 pence in England. Local debt in 1882 (see Appendix) millions, or £5 per inhabitant.

# M.—BLOCK'S RATIO OF TAXES.

	Perc	entage.		Percentage.		
•	Direct	Indirect.		Direct.	Indirect	
Great Britain	. 15	85	Spain	. 44	56	
France	. 25	75	Switzerland .	. 34	66	
Germany	. 34	66	Holland	. 33	67	
Russia	. 20	80	Belgium	. 31	69	
Austria	. 46	54	Portugal	. 30	70	
Hungary	. 78	22	Denmark .	. 28	72	
Italy	. 51	49	Sweden	. 24	76	
Greece	. 48	52	Norway	• •••	100	

# N.—RUSSIAN POLL-TAX (1882).

			Thousand	a Omitted.	Pence per
Class.			Number.	Tux.	Head.
Serfs .	•	•	21,502	£5,203	57
Proprietors			693	140	48
Cossacks			563	170	72
Baschkirs			484	100	50
Bessarabians	•	•	300	80	65
Total .			23,542	£5,693	58

# O.—Local Taxes in France.

				Thousan	ds Omitted.	
Year.		•	Paris.	30 Cities.	Communes,	Total.
1806			£736	£491	£801	£2,028
1837			2,760	1,490	4,034	8,290
1864			5,370	2,461	12,300	20,131
1882	•	•	9,805	4,230	18,405	32,440

#### TEA.

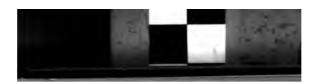
# A.—Production.

			M	illion Lbs.	Value,	
China .				290	£11,600,000	
Japan.				35	1,500,000	
India .				52	2,800,000	
Java .				7	300,000	
Paragua <b>y</b>	•	•	•	10	100,000	
To	tal			394	£16,300,000	

# B.—Consumption.

			M	illion Lbs.	Oz. per Incab.
				167	73
				72	21
				14	81
				37	7
•	•	•	•	114	•••
				394	
	:				

See Food, Table B.



# TELEGRAPH.

441

# C.—CONSUMPTION IN UNITED KINGDOM.

Year.			Lbs., Thousands Omitted.	Os. per Inhab.	Duty per Lb., Pence.	Price per Lb., Pence.
1711			142	1	66	216
1725	Ī		370	1"	66	200
1740	•		1,003	3	66	200
1750	•	•	2,568	ĕ	40	150
1760	•	•	4,072	9	36	120
	•	•				
1770			7,149	14	30	100
1780			5,152	9	40	110
1790			14,693	24	7	65
1800			20,359	21	18	70
1810			19,093	17	46	80
1820			22,452	18	38	70
1830			30,047	20	30	60
1840			32,253	20	25	50
1850	•	·	49,572	29	26	48
1860	•	•	78,340	43	18	40
1870	•	•		61	6	30
	•	•	118,200			
1881	•	•	167,700	73	6	25

In 1878 India supplied us with 17 per cent., and in 1882 with 23 per cent., of the total consumed in the United Kingdom.

# TELEGRAPH.

# A.-MILES AND MESSAGES (1880-81).

	3411	Mossages,		3611	Messages,
	Miles.	Thousands Omitted.		Miles.	Thousands Omitted.
U. Kingdom .	26,500	31,400	Mexico	9,100	700
France	43,900	19,900	Brazil	4,600	300
Germany	44,600	17,400	R. Plate	6,300	300
Russia	59,700	7,300	Chili	5,600	300
Austria	34,200	8,900	Peru	1,600	100
Italy	16,400	6,500	Central Amer.	5,400	800
Spain and Port.	12,900	2,900	West Indies .	3,200	260
Holl, and Belg.		5,700	Australia	26,900	5,100
Scandinavia .	12,900	2,800	India	22,200	1,600
Switzerland .	4,300	2,600	Japan	1,900	1,300
Roumania	3,200	1.000	Java	3,500	400
Bulg. & Servia	2,300	300	Persia	3,300	500
Greece	2,500	300	Cochin-China	1,200	100
Turkey	15,100	1,200	Egypt	5,500	700
	121,200	34,300	Algeria	4,300	800
Canada	11,300	1,200	Cape Colony .	2,700	100

# Summary.

				Miles.	Messages, Thousands Omitted.
Europe .				284,100	108,200
America .				168,300	38,200
Australia	•			26,900	5,100
Asia .				32,100	3,900
Africa .	•	•		12,500	1,600
Cables .	•	•	•	105,300	•••
Total	١.			629,200	157,000

#### B.—International Comparison.

		Miles of	telegraph,	Home	Mossegus.		
	•	Per 100 sq. miles.	Per 100,000 inhab.	tariff, pence.	Per mile,	Per 100	
United Kingdom		. 22	74	12	1200	89	
France		. 22	117	-6	450	53	
Germany		. 21	99	14	400	39	
Russia		. 3	75	38	120	9	
Austria		. 13	90	15	250	24	
Teal-		. 14	55	14	400	23	
Spein.		. 5	61	15	240	15	
Powingel		. ,	60	15	260	15	
Belgium		. 30	60	6	750	45	
Holland	'	. 12	60	6	1280	77	
Denmark		. 15	112	15	450	50	
Sweden		. 3	115	15	190	22	
Norway		. 4	250	15	160	40	
Switzerland .		. 22	160	5	620	94	
Greece		. 13	140	9	140	20	
Europe		. 7	88	13	380	33	
United States .		. 4	240		255	60	
Canada		. 1	252	•••	105	28	
Argentine Republ	ic	. 1	280		51	15	
Brazil		. i	54	•••	66	4	
Australia	,	. ī	990		190	188	

#### C.—Telegraphic Cables.

Date.			Between	Miles.
1850			Dover and Calais	25
1852			Holyhead and Dublin .	65
1866		•	Ireland and Newfoundland	1.896
1869			France and West Indies	2.584
1871			Singapore, China, Australia	4,980
1874	-		Lisbon and Brazil	6.840

There are 330 submarine cables with a length of 105,000 miles. There are 5 between Europe and North America, capable of transmitting altogether 100,000 words daily, but the traffic seldom reaches 50,000 words.

Atlantic cables show a total average cost of £550 per mile, but others have not exceeded £200. Subterranean cables have been laid in Germany, 330 miles, at £450 per mile. Ordinary land telegraphs have cost £80 per mile. The total outlay on land and sea telegraph lines to December 1882 was about 88 millions sterling.

#### D.—REMARKABLE MESSAGES.

Year.	Between	Words.	Minutes,	Observations.
1848	London and Liverpool .	700	65	Queen's speech.
1868	Cork and San Francisco .	10	2	•••
1880	London and Aberdeen .	800	6	•••
1882	Birmingham and London	7,300	42	Bright's speech.



# TELEPHONES-TEMPERATURE.

#### E.—INCREASE IN UNITED KINGDOM.

Year.			Miles of Wire,	Stations,	Messages, Thousands Omitted.
1851			<b>7,3</b> 03	198	48
1862			57,879	1,616	2,676
1872			87,719	5,179	15,502
1881			121,052	5,637	31,345

TELEPHONES.—In April 1882 the United States Bell Telephone Co. had 189,300 instruments working, with 49,000 miles of wire connecting 592 exchanges.

# TELESCOPES. - See Observatories.

#### TEMPERATURE.

### A .- THE SEA.

Fathoms.	Equator.	38 N.	Fathoms.	Equator.	88 N.
0	77-9	70·0	800	37·1	38.1
100	55·6	63· <b>5</b>	1,000	36-9	37 9
200	<b>46</b> · <b>6</b>	60.6	1,200	36.7	37.1
300	42.2	600	1,500	36.1	36.7
500	<b>38 9</b>	46.7	2,700	34.7	35-2

#### B.—Mountains (Humboldt).

Height,	Depression of	Height,	Depression of
Feet.	Thermometer.	Feet.	Thermometer.
3.724	14.07	10,790	34.72
6,740	23:31	15,744	49.62
9,029	30.07	19,286	57:38

#### C.—Boiling-point and Barometer at Elevations.

Place.			Feet over Sea.	Mean Height of Barometer.	Boiling-point (Fahrenheit).
Sea-level			0	30.0	` 212·0 ´
Rome .			151	29.76	211.6
Milan .			420	29.45	211.1
Moscow			984	28.82	210-2
Geneva			1,221	28.54	209.5
Munich			1,765	27:95	208.6
Madrid			1,995	27.72	208.0
Briancon			4,285	25:39	203.9
St. Remo			5,265	24.45	202:1
St. Gotha	rd		6,808.	23.07	199-2
Mexico			7,471	22.52	198.1
Bogota			8,731	21,42	195.6
Quito.			9,541	20.75	194-2
Antisana		•	13,455	17.87	187.4

# D.—Subterranean.

		l			Well in Y	orkshire.	
Austria	n Mine.	Rosebrid	ge Mine.		1	Fahrenheit	
Depth, Feet.	Fahr.	Depth, Feet.	Fahr.	Depth, Feet.	April,	June.	Dec.
300	48.8	480	64.5	0	50	70	38
600	50.7	600	66.0	100	45	65	41
1,200	58⋅3	1,800	80.0	200	45	55	43
1,650	61.2	2,200	88.5	300	43	52	45
4,600	120.0	2,450	94.0	350	42	46	43

See Meteorology, Thermometer.

# TEXTILES. See Manufactures, Operatives.

# THEATRES.

# A .- Number and Ratio to Population.

	Number	Per Million		N	umber.	Per Million Inhab.
Great Britain	. 152	4.4	Germany		191	4.2
France .	. 337	8.9	Russia .		44	0.6
Italy	. 348	12.5	Austria .		152	4-2
Spain	. 160	9.8	United States	٠.	550	10.3

# B.—Theatres of London and Paris.

Londor Paris	٠.				G	per An £1,320	num.	Inhabitant. 7 shillings
Latin		•	•	•		010	,000	8 ,,
			Exp	enditu	re,	Londo	n.	
Pay to	actors							£725,000
	authors	3 .						79,000
Rent .								119,000
Lightin	g, sund	lries,	and	profit	8	•	•	397,000
						Total		£1,320,000

Paris theatres employ 3200 performers.

# C .- Number and Ratio Burnt, since 1800.

		Number Burnt,	Ratio to Present Number, per Cent.		Number Burnt.	Ratio to Present Number- per Cent
Great Britai	n.	. 68	46	Germany .	. 49	26
France .	-	. 63	19	Russia .	. 25	57
Italy .		. 45	13	Austria .	. 26	17
Spain .		. 17	11	United States	. 176	32



# THERMOMETER—TILLAGE.

445

		D.—Lo	088 OF	L	IFE FI	RO3	FIRE.	
Date.		Theatre.	Victim	a. 1	Date.		Theatre.	Victims.
1772		Amsterdam	48		1847		Carlsruhe	63
1778		Saragossa	137		1857	Ī	Leghorn	102
1794	•	Capo d'Istria	945		1867	•	Philadelphia	
1811	•		78		1876	•		283
	•	Richmond				•	Brooklyn	
1836	•	St. Petersburg			1880	•	Nice	790
1845		Canton	1,660		1881		Vienna	1,460
1846	•	Quebec	355		1883	•	Smolensk	380
T	HER	MOMETER.			_			
	_				Resum	ur.	Centigrade.	
	Free	ezing point .		•	Ō		0	32
	Vin	e cultivation .			8		10	50
	Cott	on cultivation .			16		20	68
	Tem	perature of Bra	zil .		24		30	87
		ching eggs .		-	32		40	104
		ATT. 10 ADD	•	•	40		50	122
					48		60	
								140
					56		70	158
					64		80	176
					72		90	194
	Wat	ter boils	•	•	80		100	212

# See Meteorology, Temperature.

# TILLAGE.

# A.—AREA UNDER CROPS.

	Acres, T	nousands	Omitted.	Acres	Area, Percentage		
	Grain.	Other Crops.	Total.	100 Iohab.	Tilled.	Untilled	
United Kingdom .	10,655	12,223	22,878	66	29	71	
France	38,130	18,090	56,220	151	43	57	
Germany	34,740	27,890		138	47	53	
Russia	161,200	22,400	183,600	222	13	87	
Austria	36,500	20,600	57,100	155	33	67	
Italy	19,100	9,200	28,300	101	38	62	
Spain and Portugal	18,900	10,700	29,600	142	21	79	
Belgium and Holland	4,100	1,700	5,800	61	29	71	
Denmark	2,600	3,500	6,100	320	71	29	
Sweden	3,600	8,200	11,800	252	12	88	
Norway	500	2,300	2,800	155	4	96	
Switzerland	300	1,300	1,600	60	16	84	
Roumania, &c	10,500	3,100	13,600	190	30	70	
Europe	340,825	141,203	482,028	151	19	81	
United States	120,900	35,600	156,500	302	7	93	
Canada	5,100	9,100	14,200	335	1	99	
Brazil	400	4,250	4,650	48	1	99	
Argentine Republic	850	1,120	1,970	84	1	99	
Chili	800	1,060	1,860	80	2	98	
Australia	4,400	6,200		370	1	99	
Algeria	4,100	3,100	7,200	240	21	79	
Total	477,375	201,633	679,008	170	51	941	

# B.—CROPS OF UNITED STATES.

#### Millions.

				1850.	1860.	1870.	1880.
Grain, bushels				868	1,240	1,388	2,699
Potatoes ,,				66	111	143	170
Yams ,,		•		38	42	22	33
Rice, lbs.				215	187	74	110
Tobacco ,,			•	200	434	263	<b>4</b> 73
Hops "		•		3	11	25	27
Hay, tons .		•		14	19	27	35
Cotton, lbs.	•		•	1,162	2,558	1,460	2,738

For other countries see Agriculture.

# TIMBER.

# A .- PRODUCTION AND CONSUMPTION OF TIMBER

	Millions	of cubic	feet per	mnum.	Annu	
			onsumpti	on.	Consum	
	Produc- tion, All kinds.	Fire- wood.	Build- ing, &c.	Total	Value (thousands omitted).	Cubic ft. per Inhab.
United Kingdom .	140	60	395	455	£20,250	12
France	1,080	850	430	1,280	21,400	33
Germany	1,450	760	690	1,450	24,500	32
Russia	6,400	2,770	3,350	6,120	56,300	76
Austria	1,980	1,120	760	1,880	30,100	51
Italy .	480	230	280	510	12,300	18
Spain and Portugal	200	110	210	320	9,400	16
Belgium and Holland	70	20	90	110	4.700	12
Sweden and Norway	900	320	345	665	11,300	102
Europe	12,700	6,240	6,550	12,790	£190,250	41
United States	3,100	1,420	1.680	3,100	77,400	58
Canada	310	140	80	220	5,400	49
Total	16,110	7,800	8,310	16,110	£273,050	44

# B.—Consumption in United Kingdom.

Year.	Millio	ns of cubic	leet.	Cubic feet	Per load (50 cub. ft.)		
Year.		British.	Imported.	Total	per Inhab.	Duty.	Price
1790		106	11	117	8	78.	70a.
1803		110	12	122	8	25s.	90a.
1811		110	14	124	7	55s.	185a.
1820		115	22	137	7	65s.	160a.
1830		115	28	143	6	55s.	150a.
1840		115	41	156	6	55s.	150a.
1850		120	85	205	8	7s.	70a.
1860		120	145	265	9	4s.	68s.
1870		130	252	382	12	•••	65a.
1881		140	290	430	12	•••	52a.

#### TIMBER.

447

# C.—Principal Kinds.

					Cohesion.			Density.	Cohesion.
Poplar	•	•	•	0.477	1.97	Sycamore .		0.692	6.16
Fir .				0.493	4.18	Ash		0.697	678
Pine .				0.559	2.48	Acacia		0.717	7:93
Alder				0.601	4.54	Oak,		<b>0-808</b>	6:49
Aspen				0.602	7.20	Birch		0.812	4:30
Maple	•	•		0.674	3.28	Beech	•	0.823	<b>3</b> ·57

#### D.—Comparative Strength.

Poplar . !		Fir Birch		Sycamore .	
	( /a i	<b>r</b>	. I.(AA)		

#### E.-MAXIMUM AGE.

	Years.	1	Years.				Years.
Palm.	. 250	Lemon .	. 640	Spruce			1.200
Elm .	. 355	Plane .	. 720	Oak			1,600
Cypress	. 388	Cedar .	. 800	Olive		•	2,000
Ivy .	. 448	Chestnut	. 860	Yew	:	•	2,880
Maple	. 516	Walnut	. 900	Baobab			5,100
Larch	. 576	Lime .	. 1,076	Dragon			5,900

#### F.—Scale for ascertaining the Age of Trees.

Inches	Diameter.

Age, Years		Oak.	Larch.	Elm.	Spruce.	Yew.
10		5	4	1	4	1
20		10	9	5	8	2
30		14 .	14	10	12	3
50		23	24	23	19	4
70		32	33	36	24	6
100		41	40	50	27	9
150		54	50	61	36	14
200		64	58	71	44	20
250		74	67	83	52	25
300		84	75	94	60	30

Eucalyptus, or Australian gum-tree, sometimes grows 24 feet in 3 months; bamboo, 2 feet in 24 hours.

#### G.—REWARKABLE PLANTATIONS.

Plan <b>ter.</b>	Locality.	No. of Trees.	Area, Acres.
Duke of Athol .	Dunkeld	<b>28,000,000</b>	16,600
Earl of Scaffeld .	Inverness	60,000,000	40,000
French Government	Algeria	12,700,000	130,000

Among recent planters in Ireland is Lord Powerscourt, who began in 1869 and has now  $2\frac{1}{4}$  million larch and fir (some 20 inches girth and 40 feet high) in an area of 1000 acres. The plants cost £2300, and the total outlay has been 66 shillings per acre. He expects no return till the 25th year, and thenceforward 8 shillings an acre: the plantation in its 45th year will represent a standing crop worth £50 an acre.

# TIME.

# AT LONDON, NOON.

#### Forenoon.

Boston 7:15	Havanna 6.30	Quebec 7:12
Buenos Ayres . 806	Lima 6.52	
Caracas 7.32		
Chicago 6-26	Madeira . 10.48	
Demerara . 806		
Dublin 11.35		
Edinburgh 11.47		
Falkland Islands 804		
Gibraltar 11.38		
Glasgow 11'44		
	Philadelphia 7:50	
Hamaz / 11	1 I maderpma . 7 oc	' '
	Afternoon.*	
Alexandria . 2.00	Geneva 12-2	Pekin 7.46
Algiers 12.13	Jerusalem . 2.21	Rome 12.50
Amsterdam . 12-20	Lyons 12 20	St. Petersburg . 2 04
Berlin 12.54	Madras . 5 2	
Bombay . 4.51		
Buda-Pesth . 1.16		
Cairo 2.07		
Calcutta . 5.54		
Cape Town . 1.12		
Constantinople . 1.56		
Dresden . 12.54	Paris . 12-10	
D. 6346H 12 01	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	•
MTAT		

# TIN.

# A.—Production of Tin.

		10	ons,		
		Tin Ore.	Tin Metal.	Value of Ore.	Metal Ratio, Per Cent.
Great Britain		13,700	9,200	£670,000	66
Australia .		24,000	17,500	1,250,000	74
Java		15,000	9,000	700,000	60
Total .		52,700	35,700	£2,620,000	69

# B .- Production and Consumption in Great Britain.

	Tot	ns, Tin Me	tal.	İ	Consumption.		
Years.	British.	Net Import.	Total.	Value Per Ton.	Tons.	Lbs. per 100 Inbab	
1800-20 aver	2,510		2,510	£76	1,260	15	
1821-40 , .	4,180		4,180	70	2,900	26	
1841-60	5,910	450	6,360	107	6,360	51	
1861	7,450		7,450	122	7,240	55	
1871	10,900	810	11,710	136	11.710	84	
1880	9,200	6.550	15,750	91	15.750	99	

<sup>\*</sup> Dresden, for example, 12:54, signifies 54 minutes past noon.



#### TITHES-TOBACCO.

449

TITHES.—In England and Wales 11,784 clergymen collect £4,054,000, of which £962,000 go to laymen.

TITLES.—The fees in Great Britain for letters-patent are:—

Duke . Marquis .	:	£350 300	Earl . Viscount	:	£250 200	Baron Baronet	:	:	£150 100

### TOBACCO.

#### A.—Production.

					Acres.	Tons.	Value of Crop.
United St	ates				610,000	210,000	£10,500,000
West Indi	es				50,000	22,000	3,300,000
Brazil .			•		105,000	38,000	1,400,000
Japan .	•				100,000	40,000	1,600,000
Java .					110,000	46,000	1,700,000
India .					580,000	170,000	6,100,000
Russia .	·		·		110,000	75,000	2,600,000
Austria	•				140,000	65,000	3,300,000
Turkey		:	÷	:	90,000	35,000	2,700,000
Germany	·		·	:	52,000	32,000	1,500,000
France		:	:	:	26,000	15,000	900,000
Manilla, &	c.	:	:	:	54,000	20,000	1,100,000
		•	•	•			
Total					2,029,000	768,000	£36,700,000

#### B.—Consumption per Annum.

	Tons.	Ozs. per Inhab.		Tons	Ozs. per Inhab.
United Kingdom	23,000	23	Turkey	22,000	70
France	32,000	29	Switzerland .	7,000	82
Germany	91,000	72	Europe	383,000	44
Russia	54,000	24	United States.	85,000	59
Austria	85,000	80	India	165,000	30
Italy	18,000	22	Japan	38,000	39
Spain and Port	18,000	32	Brazil	20,000	70
Belg. and Holl	23,000	84	Colonies, &c	77,000	•••
Scandinavia	10,000	40	The World .	768,000	•••

# C .- Exportation from United States.

Year.				Million Lbs.	Lbs. per Inhab.	Value, Thousands.	Per Lb., Pence.
1790				132	33	•••	•••
1800				89	17	£1,100	3.0
1810	•	:		92	13	960	2.5
1820			·	93	9	1.550	40
1830	•	·	:	96	8	1,100	2.8
1840	•	:	:	141	š	1,920	3.3
1850	•	:	:	168	ž	3,510	5.0
1860	•	:	:	193	Ġ	2,460	3.0
1870	•	:	:	188	5	4,300	5.6
1880	•	•	:	217	ă	3,420	37
	•	•	•		•	0,120	2 F

# 450 - TOBACCO-TRADES' UNIONS.

# D.—Tobacco Crop of United States.

	1871.	1880.	10 Years.
Acres	580,000	610,000	634,000
Crop, million lbs	426	460	473
Per acre, lbs	734	754	747
Value of crop	£8,760,000	£10,520,000	£8,910,000
Per acre, shillings .	292	344	. 281

About 55 per cent. of the crop is exported.

# E.—Consumption in United Kingdom and France.

		Million	n Lbs.	Oss. per In	habitant.	Duty, Pence per Lb.		
		United Kingdom.	France.	United Kingdom.	France.	United Kingdom.	France.	
1801 .	_	17		16		20		
1811 .		21	20	18	11	27	6	
1821 .		16	22	12	12	48	6	
1831 .	:	20	24	13	12	48 36	12	
1841 .	:	22	36	13	17	36	12	
1851 .		31	44	18	20	36	24	
1861 .		35	56	19	24	36	30	
1872 .		41	61	22	26	36	40	
1881 .		51	70	23	29	42	44	

# TRADES' UNIONS.

# A.—Bevans's List of Strikes (1870-79).

Trades.			-00	Districts. Towns.	_
Builders .			598	Scotland 473 London	XV.
Colliers .				York 338 Manchester	
				Lancashire 149 Leeds 7	
				Northumberland 138 Sheffield 6	
				South West . 135   Glasgow	
Various .			800	Various 1,119   Edinburgh (	
				Newcastle	3
Total	•	•	2,352	Total 2,352	

# B.—Howell's Balance Sheet (1851-81.)

# Payments.

Sick opera	tive	8					£1,004,000
Out of wo	rk d	0.	•	•			1,979,000
On strike	do.						274,000
Pensions.							330,000
Funerals			•	•			319,000
Accidents	•			•			120.000
Loans	•	•	•	•	•	•	67,000
		To	tal				£4,093,000



#### TRAMWAYS-TRANSPORT.

#### TRAMWAYS.

	A.—	-British.				
(1881.) Miles Million passengers Average fare ,,, expense Net profit Do. per mile Profit on capital Capital, per mile	England. 376 144 1-96d. 1-59d. 0-37d. £591 4-30 £13,700	8cotland. 60 49 1°34d. 0°92d. 0°42d. £1,440 9°40 15,300	Ireland. 52 13 2'46d. 1'93d. 0'53d. £535 3'16 16,900	U. Kingdom. 488 206 1.83d. 1.44d. 0.39d. £697 4.91 14,200		

# B.—French.

(1880.)					Sum.	Per Mile.
Receipts					£1,080,500	£4,002
Expenses	١.				1,039,500	3,851
Profit		•	•		41,000	151
Capital			•		4,330,800	16,040

Net profit on capital less than 1 per cent.

# C.—AMERICAN (UNITED STATES AND CANADA).

Lines		415	Horses	100,000
Miles		3,000	Million passengers	1,214
Officials		35,000	Capital £	31,000,000

The horses, last 4 years, draw 18,000 cars, and consume annually 150,000 tons hay and 300,000 tons grain.

## TRANSPORT.

# A .- SEA-BORNE MERCHANDISE (THE WORLD).

		Annual Av	erage, Tons, s Omitted.	1880. Tons, Thousands	Ratio.		
		1861-70.	1871-80.	Omitted.	1861-:0.	1880.	
Grain .		4,375	10,072	10,530	8.1	8.9	
Cotton		486	995	1,170	0.9	10	
Wool.		121	252	301	0.2	0.3	
Meat .		125	380	660	0.2	0.6	
Coal .		14,200	22.100	30,400	26.3	25.8	
Iron .		1,920	3,490	4,588	3.6	3.9	
Sugar .		1,260	2,086	2,350	2.8	20	
Clothing		1,410	2,520	2,815	2.6	2.4	
Coffee		346	452	527	0.6	0.5	
Timber	: :	16,170	21,215	23,550	29.7	200	
Sundries	: :	13,807	26,778	40,875	25.5	34.6	
Tota	ı .	54,220	90,340	117,766	100.0	100-0	

<sup>&</sup>quot;Sundries" includes passengers' baggage.

# B.—SEA-BORNE MERCHANDISE AND VALUE (THE WORLD).

					Increase of Decade.		
Year,		Tons, Millions.	Value, Million £.	Value per Ton.	Million Tons.	Million	
1830		10	193	£19	•••		
1840		15	287	19	5	94	
1850		25	438	17	10	151	
1860		41	701	17	16	263	
1870		71	995	14	30	294	
1880	-	129	1 360	101	KŘ	365	

In 1880 the freight earned averaged 16 shillings per ton, say 8 per cent. of value.

# C.—Goods Traffic on Railways.

	Millio	n Tons.	Inhab	s. per oitant.	Traffic of 1880.		
	1870	1880,	1870.	1880.	Tons per Mile.	Pence per Ton	
United Kingdom .	107	215	103	124	12,400	38	
France	52	70	29	36	4,700	80	
Germany	98	137	49	61	6,600	48	
Russia	9	35	3	9	2,400	-	
Austria	25	47	14	26	3,900		
Italy	6	10	5	7	1,900	105	
Spain and Portugal	4	7	5	7	1,400	116	
Belgium	24	30	98	108	11,800	28	
Holland	2	4	12	20	3,200	53	
Scandinavia	4	8	12	20	1,550		
Switzerland	4	6	33	44	3,700	***	
Europe	398	569	27	35	5,550	442	
United States	155	290	81	108	3,260	52	
Canada	4	10	25	45	1,620		
Australia	1	4	10	30	900	***	
India	5	9			1,500	555	
South America, &c.	5	11	***	Fasi	3.04	***	
Total	568	893	1		3,870	66	

The freight charge, "pence per ton," is irrespective of distance, but in most countries it averaged one penny per mile (see *Freight*), the gross result being equal to 110 pence for 100 miles per ton. See *Railways*, *Shipping*.

# D.-Goods Traffic in France (1877).

Canals and rivers Highroads . Railways .	:	Miles. 7,140 23,800 13,100	Tons. 20,400,000 17,400,000	2,850 730	Tons per 100 Inhab, 56 48
Total .		44,040	85,100,000 122,900,000	6,600 2,800	230 



#### TRAVELLERS.

The above does not show the actual weight carried, but its equivalent, counting 60 miles as a journey. "Highroads" are only the main roads, without counting 214,000 miles of other roads.

#### TRAVELLERS.

- A.—The railways of the world carry 145 million passengers monthly: average fare, 19 pence; average journey, 21 miles.
- B.—The tramways of Great Britain, France, and North America carry 130 million passengers monthly: average fare, 2 pence.
- C.—The steamers between Europe and North America carry 70,000 passengers monthly: average fare, £5.

  D.—The steamers between Great Britain and the Continent
- carry 120,000 passengers monthly.
- E.—The monthly average of travellers arriving in Paris (not counting Banlieue or local traffic) is 1,200,000 persons.
- F.—The French highway traffic, that is, of persons travelling in coaches, is 900,000 per month.
- G.—The local traffic averages 21 million persons monthly in Paris, and 28 millions in London.

#### H.—Paris Local Traffic.

Year.			, a	ionthly Average.	Ratio to Population
1854				2,840,000	240 to 100
1860				5,930,000	365 ., 100
1872				9,260,000	530 , 100
1880		•		20,810,000	935 , 100
					• •

# I.—Travellers in Switzerland (1879).

Americans . Russians . Germans . English, &c.	:	:	Number, 210,000 160,000 350,000 227,500	8um Spent. ±1,680,000 1,600,000 700,000 1,820,000	Per Hoad. £8 10 2 8
Total			947,500	£5,800,000	£6

# K.—Travellers in Russia (1870).

Germana	•	•				237,000
Austrians	•	•	•	•	•	123,000
English, &c.	•	•	•	•	•	28,000

. 398,000 Total

See Conveyances, Passengers, Railways.

TRUFFLES.—Perigord produces 1500 tons per annum, worth £1000 per ton; 90 per cent. are consumed in France.

TUG-BOATS.—One tug on the Mississippi can take in 6 days, from St. Louis to New Orleans, boats carrying 10,000 tons of grain, which would require 70 railway trains of 15 waggons each.

The tugs in Suez Canal tow a vessel from sea to sea in 44

hours, and charge £200.

TULIPS.—One root of the "Viceroy" sold at Amsterdam for £2600, and when a law was passed against paying over £500 for a root, a "Semper Augustus" fetched £460, with a carriage and pair of horses. Holland has 600 acres under tulips, and exports the value of £110,000 per annum.

#### TUNNELS.

# A.—Existing Tunnels.

Date.	Tunnel.	Length, Yards.	Cost per yard.		Years in making.	Aperture fcet.
1827	Harecastle	2,926	•	Telford	3	$14 \times 16$
1835	Kilsby	2,070	£154	Stephenso	n .	$27 \times 24$
1843	Thames	560	1,100	Brunel	11	$38 \times 22$
1870	Mont Cenis	13,540	201	Grattoni	13	10×8
1879	Baltimore	10,800	•••	•••		•••
1881	St. Gothard	16,390	152	Favre	8	9×8

There is a tunnel of 5200 yards on the Sheffield and Manchester Railway, the longest in the United Kingdom.

#### B.—In Construction.

Tunnel.	Length,	Estimated cost.	Per yard.	Progress, feet daily.	Aperture, feet.	Begun
Channel	40,000	£3,200,000	£80	60 °		1883
Mersey	1,740	350,000	200	30	$27 \times 20$	1883
Schemnitz	26,400			3	84×7	1783
Hoosac	7,900				$24 \times 9$	1870
Aarlberg	11,300	1,800,000	165	38	•••	1865
Hudson	1,833	2,000,000	1,100	4	$18 \times 18$	1880
Comstock	6,160	1,000,000	160	15	$10 \times 14$	
Panama.	7,000	5,600,000	800		$100 \times 150$	1881
Messina	14,800	2,600,000	180			1883
Hamburg	800	139,000	160	•••		1883

The only tunnel in Australia is the Belmore,  $6 \times 4\frac{1}{2}$  feet, progress one foot daily. The Schemnitz, in Germany, which is in progress since the eighteenth century, is expected to be finished by 1890. The works of the Channel tunnel are suspended (August 1883), owing to opposition in Parliament.

#### TURNIPS—TWINS.

#### 455

#### C.—Boring Engines.

Da'e.		Inventor.	Strokes per Minute.	Date.	Inventor.	Strokes per Minute.
1813		Trevithick		1873 .	Darlington	500
1853		Bartlett .		1873 .	Ferroux .	•••
1857		Sommeiller	400	<b>1873</b> .	Ingersoll .	400
1863		Sachs .	400	1875 .	Barrow .	•••
1868		Dubois .	300	1875 .	Ullathorne	
1868		Francois .	300	<b>1876</b> .	Beaumont	
1869		Burleigh .	400	1876 .	Geach .	500
1869		Ostercamp	220	1877 .	Jordan .	
1872		M'Kean .	500	1877 .	Schramm .	500

# D.-METHODS AND RESULTS.

Tunnel.	Feet Opening.	Engine.		Pressure s. Sq. In.	Tons Excavated.	Tons Daily.
Thames .	800	Brunel			45,000	12
Mont Cenis	81	Sommeill	er	90	240,000	60
Airolo .	70	M'Kean		90	•••	•••
Schemnitz	60	Sachs		60	45,000	15
Comstock	140	Burleigh		70	•••	155
Hudson .	324			•••	52.000	80
Ronchamps	52	Dubois		67	•••	•••
Belmore	27	Darlingto	n	50	•••	3
St. Gothard	72	Ferroux		90	265,000	102

The Channel and Mersey tunnels employ Beaumont's compressed-air borer. The cost of excavation was £13 per ton of clay in the Thames Tunnel, £11 per ton of rock in Mont Cenis, and £9 per ton in St. Gothard. See Diamond-drill.

TURNIPS.—The United Kingdom had in 1881 an area of 2,341,000 acres under turnips, yielding a crop of 47 million tons, equal for cattle-food to 16 million tons hay.

TURKEYS.—There are 2,400,000 in United Kingdom.

#### TWINS.

#### Per 1000 Births.

England		11.3	Bavaria	14.1	Belgium .		9.1
Scotland		117	Russia	12.1	Holland .		12.8
Ireland		17.6	Austria	13.4	Denmark .		
France			Italy				
Prussia		12.6					
Saxony		12-2	Spain	8.4	Iceland .		. 14-2

Twins give 108 males to 100 females.

**TYPES.**—The *Times* uses  $2\frac{1}{4}$  million, the other morning papers not quite a million each in their daily impression. See *Letters*.

TYPHUS.—Deaths from typhus in Vienna averaged 734 per annum in the years 1865-71, but since the sanitary improvements of 1872 the average has been only 291 per annum: the general death-rate has declined 2 per cent. relatively. See *Diseases* and *Appendix*.

# U

UMBRELLAS.—The progress of this manufacture in France has been as follows:—

Year.	Makers.	Value.
1830	160	£280,000
1847	303	405,000
1882	890	1,180,000

At an average of 4 francs it would be 7½ million umbrellas for 1882, or nearly one for each inhabited house in France.

#### UNIVERSITIES.

	A.—Gene	RAL SUMM.	ARY. 🐼	
	Universities.	Professors.	Students.	Students per Million Iuhabitants.
United Kingdom	11	344	13,400	390
France	. 1	180	9,300	250
Germany	. 21	1,920	25,084	545
Russia	. 8	582	6,900	82
Austria	. 10	1,810	13,600	360
Italy	. 17	600	11,140	405
Spain	. 10	380	16,200	990
Portugal	. 1	40	1.300	405
Belgium	. 4	80	2,400	440
Holland	. 4	80	1,600	400
Denmark	. 1	40	1,400	700
Sweden	. 2	173	2,010	310
Norway	. ī	46	830	460
Switzerland .	. 3	90	2,000	700
Greece	. 2	40	800	560
_				
Europe	. 96	7,025	106,964	320
United States	. 360	4,240	69,400	1,280
Total	456	11,265	176,364	480



# UNIVERSITIES.

# B.—Universities of the United Kingdom (1876).

	Students.	Annual Expenditure,	Per Student.
Oxford	1,860	£414,000	£220
Cambridge	1,920	340,000	177
Dublin	810	160,000	198
Edinburgh	2,320	200,000	87
Glasgow	1,340	90,000	68
Aberdeen	650	30,000	45
St. Andrew's .	300	17,000	56

Besides the above, there are the universities of London, Durham, Manchester, and the new Royal University of Ireland.

#### C .- Incomes of Oxford and Cambridge.

	N	To.	Inco	ome.	Average.		
	Oxford.	Cam- bridge.	Oxford.	Cam- bridge.	Oxford.	Cam- bridge.	
Principals .	24	17	£33,000	£20,000	£1,380	£1,200	
Professors .	40	36	24,000	12,000	600	330	
Fellows	340	430	102,000	103,000	280	240	
Scholars	480	790	44,000	33,000	92	42	
Libraries, &c.		•••	211,000	172,000			
Total	904	1,273	£414,000	£340,000	£220	£135	

The endowments are £280,000 per annum in Oxford, and £235,000 in Cambridge, the rest being made up of various revenues.

#### D.—CAMBRIDGE B.A. GRADUATES.

Year.		No.	Year.		No.	Year.		No.
1500		7	1620		271	1830		324
1530		40	1628		315	1835		314
1560		60	1648		174	1840		339
1600	-	 167	1658	-	 174			

# E.—Indian Competitive Examinations (Winners).

						Per Cent.
Oxford students		•		•		· 28
Cambridge students		•				24
Dublin students		•				17
Scotch Universities		•				14
London, Cork, &c.	•	•	•	•	•	17
						100

## F.-LARGEST UNIVERSITIES.

Founded A.D.			University.	Professors.	Studenta
1206			Paris .	. 180	9,300
1365	_		Vienna .	. 160	3,975
1810			Berlin .	. 142	4,100
1409			Leipsic .	. 120	3,110
1224		·	Naples .	. 110	2,960
1635			Buda-Pesth	. 141	2,375
1582			Edinburgh	. 43	2,320
1472			Munich .	. 82	2,017
1257			Cambridge	. 36	1,920
1280			Oxford .	. 40	1,860
1755			Moscow .	. 117	1,620
1476			Upsal .	. 104	1,480
1479			Copenhagen	. 60	1,400
1303			Rome .	. 50	1,300
1240			Salamanca	. 40	1,300
1638			Harvard .		•••

The University of Paris has 2500 law students, 2800 medical, 1500 science, and 2500 belles-lettres.

# G.-GERMAN UNIVERSITES.

# Matriculated in 1883.

Berlin Leipsic Munich Breslau Halle	•	:	4,300 3,100 2,300 1,600 1,400	Gottingen Wurzburg Heidelberg Konigsberg Marburg.	:	1,100 1,100 1,020 910 820	Krlangen Jena Kiel Greissen	•	:	710 690 620 410 400
Halle Tubingen		:	1,400 1,400	Marburg. Strasburg	:	820 800	Greissen Munster	:	:	400 320
Bonn			1,200	Freyburg	•	780	Rostock	•	•	2:50

In the German universities the students are 89 per cent. Germans and 11 per cent. of other nations, Americans being 1 per cent.

## H.—Russian Universities.

	Profs.	Students.			Profs.	Students.
St. Petersburg	45	1,200	Kiev .		92	780
Moscow	117	1,600	Kazan		67	620
Warsaw	76	1,020	Kharkov		62	540
Dorpat	66	710	Odessa	•	54	390

# V

VEGETARIANS.—Death-rate in India is 2.05 among the vegetarian population, per 1000 persons per annum, and only 1.89 among non-vegetarians, a difference of 8 per cent.



# VIADUCTS—VITAL STATISTICS.

### VIADUCTS.

	Length, Feet.	No. of Arches.	Span, Feet.	Height, Feet.	Width, Feet.	Cost, pence per Cubic Yd.
Weaver	1,484	20	60	84	30	92
Stockport	1,792	26	63	90	32	91
Dane	1,717	23	63	88	31	75
Rugby	720	13	50	51	30	88
Tamworth .	710	20	30	45		99
Llangollen .	1,800	19	85	150	_	90 .
Wharncliffe .	895	11	70	83	35	144
Trent	1,286	56	20	33	29	86
Kinzua (N.Y.)	2,050	20	60	301	_	30?
Cantal (Fr.) .	1,880	_	_	413	_	44?

The Kinzua, built by Mr. Barnes, seems to have cost about 30 pence per cubic yard, employing 2000 tons iron and 7000 tons masonry, supported by 20 iron piers, and costing altogether £62,000. The Cantal, under the direction of M. Eiffel, approaches completion: estimate, £120,000.

# VINEYARDS. See Wines.

## VITAL STATISTICS.

# A.—Decade ending 1880.

				JUDING I	000.	
		Per	1000 Inhabit	ants per An	num.	Medium Pop., Thousands
		lirths.	Deaths,	Increase.	Marriages.	Omitted.
England .		35.5	21.5	14.0	8.15	24,110
Scotland .		35.2	21.8	13.4	7.24	3,513
Ireland .		26 <b>-2</b>	18.1	8.1	4.67	5,342
U. Kingdom		34-0	20.9	13.1	7.46	32,965
France .		25.6	24.3	1.3	7:95	36,906
Germany .		39.8	27.1	12.7	8.85	42,727
Austria .		39.9	31.2	8.7	8:55	21,265
Hungary .		43.0	40.1	2.9	10.30	15,562
Italy .		36-9	29.7	7:2	7:65	27,619
Spain .		37.2	29.7	7.5	7.55	16,713
Sweden .		30.3	18.4	11.9	6.80	4,368
Denmark		31.2	19.3	11.9	7.80	1,877
		В	-United	Kingdo	M.	Medium
		Engl	and, per 100	Inhab. per	Annum.	Population,
		Births	Deaths.	Increase.	Marriages	Thousands Omitted.
1841-50 .		32.6	22.4	10.2	8.05	16,840
1851-60	•	34.1	22-2	11.9	8:43	18,940
1861-70	•	35.3	22.6	12.7	8.33	21,250
1871-80	•	35.2	21.5	140	8.15	24,110
10/1-00 .	•	<b>30</b> 3			0 10	24,110
			Scotla	ınd.		
1855-60 .		<b>33</b> -9	20.8	13.1	6.84	3,020
1861-70 .		350	22 0	13.0	7.06	3,202
1871-80		35-2	<b>2</b> 1·8	13.4	7:24	3,513
			Irela	nd.		•
1864-70 .	_	26:3	167	9.6	5-24	5,506
1871-80	•	26.3	18.1	8.1	4.67	5,342
	•		20 L	0.1	- 01	-1010

### C.—French Rates since 1800.

Years.			Births.	Deaths.	Increase.	Marriagea.
1800-10			31.9	27.7	4.2	7.6
1811-20			317	26.0	5-7	7-9
1821-30			30-9	250	5-9	7-8
1831-40			29.0	24.8	4.2	80
1841-50			27.4	23.3	4.1	8-0
1851-60			26.3	23.9	2.4	7-9
1861-70	·		26.6	23.0	3.6	80
1871-80			25.6	24.3	1.3	7.9

### D.—United States Natural Increase.

Years.		1	Per Cent. 1	Years.		1	Per Cent.
1790-1800			34.1	1841-50			26-2
1801-10			34.4	1851-60			24-2
1811-20			32.5	1861-70			15.4
1821-30			31.8	1871-80			22.8
1831-40		•	28.1			•	

The above shows the net increase after deducting for immigration: see page 361.

See Births, Deaths, Marriages.

# VOLUNTEERS IN GREAT BRITAIN.—The following table shows the roll and number of efficients:—

			Roll.	Efficient.	Effective	s in	1882	
1860			160,300	106,400	Cavalry			600
1865			226,700	133,800	Engineers.	&c.		8.800
1870			245,000	170,700	Artillery			37.800
1875			238,300	168,700	Infantry			159,500
1880			243,500	196,900		-		
	•	•	,	== 2,000	Total			206 700

# $\mathbf{w}$

### WAGES.

# A.—Diocletian's Tariff (a.d. 303).

# English Pence Daily, without Food.

Shepherd		10	Labourer.	10	Painter .	30
Ass driver		10	Mason .	20	Smith	20
Baker.		20	Carpenter	20	Stonecutter	25

The pay to a brickmaker was 12 pence per 100, to a sheep-shearer 80 pence per 100, to a common schoolmaster 30 pence per month, to one who taught Greek or geometry 100 pence per month for each pupil, and a lawyer's fee was 600 pence. The tariff was for the empire.



# WAGES.

			,			
Year.		Bailiff.	Shepherd.	Labourer.	Woman.	Boy.
1400		£1 0 0	£0 16 0	£0 12 0	£0 8 0	£0 6 0
1450		1 5 0	100	0 16 0	0 12 0	0 8 0
1500		1 12 0	1 6 0	1 0 0	0 14 0	0 10 0
1550		1 16 0	1 10 0	1 6 0	0 16 0	0 12 0
1600		2 6 0	1 16 0	1 12 0	1 0 0	0 18 0
1650		5 0 0	4 0 0	2 10 0	1 12 0	1 4 0
1700		6 0 0	500	4 0 0	3 0 0	2 10 0
1750		8 0 0	6 10 0	5 0 0	4 0 0	3 0 0
1800		20 0 0	16 0 0	12 0 0	8 0 0	6 0 0
1850		40 0 0	25 0 0	20 0 0	10 0 0	8 0 0
1880		52 0 0	36 0 0	30 0 0	15 0 O	10 0 0

# C .- SAME TABLE IN WEIGHT OF SILVER.

Year.		Bailiff.	Shepherd.	Labourer.	Woman.	Boy.
1400		£2 6 6	£1 17 0	£1 8 0	£0 18 6	£0 14 0
1500		290	200	1 11 0	120	0 15 6
1600		2 11 0	200	1 15 0	120	100
1700		6 <b>6</b> 0	5 5 0	4 4 0	3 3 0	2 12 0
1800		21 0 0	16 16 O	12 1 <b>2 0</b>	880	6 6 0
1880	•	<b>52 0 0</b>	36 O O	<b>30 0 0</b>	<b>15 0 0</b>	10 0 0

# D.—Same Table in Purchasing Value.

Year.	Bailiff.	Shepherd.	Labourer.	Woman.	Boy.
1400	£7 7 0	£5 18 0	£4 8 0	£3 0 0	£2 4 0
1500	9 12 0	7 16 0	600	4 4 0	3 0 0
1600	7 10 0	600	5 5 0	3 6 0	3 0 0
1700	<b>12 0 0</b>	10 0 0	800	600	500
1750	<b>15 0 0</b>	12 0 0	9 10 0	7 10 O	5 14 0
1800	<b>28 0 0</b>	22 8 0	16 16 O	11 4 0	880
1880	52 0 O	<b>36 0 0</b>	<b>30 0 0</b>	<b>15 0 0</b>	10 0 0

# E.—ARTISAN'S WAGES IN ENGLAND.

# Shillings per Week.

Year.	Bl	cksmith.	Mason.	Carpenter.	Plumber.	Cotton- Spinner.	
1740		16	16	15	18	12	
1780		17	17	15	18	12	
1820		24	25	20	25	16	
1840		21	23	20	22	18	
1860		<b>2</b> 8	30	25	30	20	
1880	•	32	35	30	35	24	

# F.—EARNINGS OF BRITISH WORKING-CLASSES (1882).

			Number.	Earnings, Million &	Average per Annum.
England			6,131,000	374	£61 0 2
Scotland	•		929,000	46	49 10 4
Ireland		•	1,482,000	<b>26</b>	24 7 0
U. Kin	gilom		8,542,000	456	£53 6 1

# WAGES.

# G.-WAGES IN FRANCE, PENCE DAILY.

			1700.	1750.	1790.	1810.	1850.	1886.
Printer .			18	20	25	30	25	35
Painter .			15	18	20	35	22	33
Carpenter			15	18	20	35	22	35
Tailor .			10	15	18	30	20	28
Blacksmith			15	18	20	30	25	35
Builder .	•	•	15	18	20	35	22	35
Bootmaker	•	•	10	15	18	30	21	28
Plumber .	•	•	15	18	20	35	22	33
Baker .	•	•	10	15	18	30 .	20	33
Milliner .	•	•	Ã	8	ã	10	13	20
Laundress	•	•	ĸ	6	ě	ĩŏ	13	18
Farm-labourer	•	•	ĕ	10	12	18	20	25
Woman	•	•	4	10	4	9	10	15
	•	•	3	8	v	3	10	13
Boy ,,		•	Z	z	3	3	Ð	•

# H.—RISE OF AGRICULTURAL WAGES.

	Day-La Per	bourer,		or, per	Female do., per		
	1835.	1880.	1835.	1880.	1835.	1880.	
England	20	30	£12	£20	£6	£9	
Scotland	16	28	9	18	5	8	
Ireland	8	18	5	10	2	4	
France	15	25	8	12	3	6	
Germany	8	18	4	10	2	5	
Russia	6	12	3	8	2	4	
Austria	10	20	8	12	2	4	
Italy	4	10	2	6	1	3	
Holland	9	20	6	10	3	5	
Belgium	9	20	6	10	3	5	
Scandinavia .	8	14	4	8	2	4	
United States.			20	27	15	22	

# I.—Artisans' Wages in 1880.

	Shillings per week.										
	Great Britain.	France.	Belgium.	German <b>y</b> ,	Italy.	New York.	Chicago.				
Printer .	32	20	19	20	16	54	62				
Painter .	32	21	18	16	19	54	38				
Plumber .	33	23	25	15	16	62	66				
Tailor .	25 31	21	17	15	18	58	50				
Shoemaker	31	20	14	13	18	62	56				
Carpenter	33	23	23	16	17	44	42				
Mason .	35	17	25	15	15	56	33				
Smith .	31	23	18	15	16	50	44				
Tinsmith	28	18	20	16	15	50	44				
Baker .	27	23	18	15	16		42				
Collier .	24	15	14	16	•••	•••					



# WAGES.

463

# K .- WAGES IN UNITED STATES.

Millions of Dollars. Per Operative, in & Sterling.											
	M	illions o	of Dollar	18.	Per Or	crative,	in £ 80	erling.			
	1850.	1860.	1870.	1880.	1850.	1860.	1870.	1880.			
Maine	7	8	14	14	51	47	52	53			
N. Hampshire	6	8	14	15	46	50	60	65			
Vermont	2	3	6	5	52	66	61	58			
Rhode Island .	5	9	19	21	50	57	66	67			
Connecticut .	12	19	39	44	51	60	75.	78			
Massachussetts	42	57	118	128	49	55	76	72			
New England	74	104	210	227	49	55	72	70			
New York	49	65	142	199	52	59	72	79			
New Jersey .	9	16	33	46	49	59	80	73			
Pennsylvania .	37	60	128	134	52	56	74	70			
Delaware	1	2	4	4	50	60	70	62			
Maryland	7	7	13	19	50	52	58	54			
Middle	103	150	320	402	51	58	72	76			
Virginia	5	9	9	11	35	50	49	41			
Georgia	2	3	5	5	44	55	52	42			
Kentucky	5	6	9	12	46	57	53	60			
Tennessee	2	3	5	5	34	50	47	47			
Louisiana	2	4	5	4	56	78	36	60			
Various	4	9	12	15	44	52	48	50			
South	20	34	45	52	50	57	45	47			
Ohio	13	22	49	62	51	59	65	69			
Illinois	3	8	31	57	50	53	69	75			
Michigan	3	7	21	29	65	60	60	77			
Wisconsin	2	4	14	19	65	55	56	67			
Missouri	5	7	31	24	64	70	88	70			
Indiana	4	6	18	22	58	60	57	70			
Iowa.	•••	2	7	10		65	55	66			
Minnesota		38	35	38	58	60	65 63	70			
West	38	94	210	270	58	60	64	70			
The Union .	235	382	785	951	51	58	69	73			

# L.-American Wages and Manufactures Compared.

# Ratio of Wages to Manufactures Produced.

-		"	 	•		~~~	
States.			1850.	1860.	1870.	1880.	Average, per Cent.
New Englan	ıd		26	22	21	21	22
Middle			22	19	18	18	19
South .			21	18	16	16	18
West .			21	17	17	16	18
Union .			24	19	18	18	20

WAGES.

# M.—RELATION BETWEEN WAGES AND FOOD.

			Shill	ings per	week.	Ratio.			
			Wages.	Food.	Surplus.	Wages.	Food.	Surplus	
Great Britain		_	31	14	19	100	45	55	
France			21	12	10	100	57		
Germany .	-		16	10	6	100	62	38	
Belgium .			20	12	8	100	60	40	
Italy .			15	9	6	100	60	43 38 40 40 38	
Spain	•	:	16	10	6	100	62	38	
United States	·	:	48	16	32	100	33	67	
Australia .	:	•	40	ii	32 29	100	28	72	

# N.—Cotton Mill Operatives' Wages.

# Skillings per week.

		I	ingland.	United States.			H	ngland,	United States
Sizers .			36	40	Cardboys			14	10
Weavers			30	35	Doffers			15	16
Pickers .			15	28	Warpers			15	16
Strippers	•		17	28	Winders	•	•	15	16

# O.—Woollen Operatives.

# Shillings per Week.

Sorter			England.	France.	Belgium.	Germany. 5*	U. States.
	•	•					77
Carder			24	11•	8*	8*	25
Spinner			12*	11•		12	26*
Dresser			24	16	12	7*	54
Weaver			30	24	18	12	35
Fireman			26	19	15		35
Carpenter			33	27	15	_	52
Engineer	•		40	27	18	16	75

# P.-Wages in Massachusetts (1882).

Manufacture	<b>)</b> .		Operatives.	Days, per Annum.	Earned, per Head.	Pence, per Day.
Cottons			59,700	306	£54	42
Boots			37,100	271	79	69
Woollens			22,600	301	65	52
Metals			18,300	294	88	72
Machines			11,600	303	102	81
Clothing			11,500	294	73	59
Sundries	•	•	47,100	281	89	63
Total			207,900	291	75	62

<sup>&</sup>lt;sup>4</sup> Females.



# WAGES-WARS.

# Q.—Wages of Working-Classes, United Kingdom (Levi).

			Millions Sterling per Annum.						
			1	ingland.	Scotland.	Ireland.	U. Kingdom.		
Agriculture	э.			44	8	23	75		
Textiles				33	6	8	47		
Building				35	4	4	43		
Clothing				21	5	7	33		
Metals .				27	3	2	32		
Ships and I	Rail	WA YS		25	2	1	28		
Mines .		•		13	2		15		
Servants				47	5	8	60		
Various				66	8	12	86		
						_			
Total				311	43	65	419		

The above was for the year 1862, and is no longer applicable. See  $Table\ F$ .

# WARS.

# A.-WARS SINCE 1793.

			Expe	nditure.	
Date		Belligerents.	Million &	Millions per Annum.	Loss in Men
1793-1815		England and France .	1,250	60	1,900,000
1828 .		Russia and Turkey .	20	20	120,000
1830-40		Spain and Portugal (civil)	50	5	160,000
1830-47		France and Algeria .	<b>3</b> 8	2	110,000
1848 .		Europe (sivil)	10	10	60,000
1854-56		England, France, Russia,	305	146	485,000
1859 .		France and Austria ,	45	45	63,000
1863-65		United States (sivil) .	740	<b>3</b> 50	656,000
1866 .		Prussia and Austria .	20	20	51,000
<b>1866</b> .		France and Mexico	15	15	65,000
1864-70		Brazil and Paraguay ,	48	8	330,000
1870-71		France and Germany .	316	316	290,000
1876-77	•	Russia and Turkey	190	190	180,000
			3,047	36	4,470,000

			DUI	rmary,	Per Annum.		
Period.		1	Expenditure Million &	Loss of Life.	Million £.	Loss of Life.	
1790-1820			1,250	1,900,000	42	63,000	
1821-1850			118	450,000	4	15,000	
1851-1860			350	548,000	35	55,000	
1861-1880			1,329	1,572,000	66	79,000	
					_		
			3,047	4,470,000	33	50,000	
						2 g	

465

# B.—British Wars.

Date.	Locality.	Expen	Commander.	
27410.	zoczny.	Millions &	Per Inhab.	Commence.
1599	Ireland	. 4	£1	Essex.
1642 <del>-4</del> 8 .	England and Ireland		11	Cromwell.
1688-97 .	Ireland and Holland	33	6	William III.
1702-63 .	Germany, Spain, &c.	. 182	24	Marlborough, &c.
1759	Canada	. 62	8	Wolfe.
1775-80 .	United States .	. 121	13	Cornwallis.
1793-1815	France, &c	. 831	55	Wellington.
1854-56 .	Crimes	. 69	2	Ragian.
		1.359		_

# C.—FRENCH WARS.

Date.		Reign.	Locality.	Ex	penditure, illions &	Commander.
1654-1713		Louis XIV	Flanders, &c.		154	Turenne, &c.
<b>1733-63</b> .		Louis XV	,,		82	Saxe.
1778-83 .		Louis XVI	United States		22	Lafayette.
<b>1791–1</b> 815		Napoleon	Europe, &c		255	Buonaparte.
1830-47 .		Louis Philippe	Algeria		38	Bugeaud, &c.
1854-56 .		Napoleon III	Crimea		93	Pellissier.
1859		- ,, .	Italy		18	MacMahon.
1866		,,	Mexico . ,		15	Bazaine.
1870-71 .	•	,,	Rhine		316	Lebeuf.

# D.—Russian Wars.

Date.			Reign.			Locality.	penditure, illions £.	Loss in Men.
1828 .			Nicholas .			Balkans .	15	86,000
1854-56			,, .			Crimea .	142	330,000
1876-77			Alexander II	[		Turkey .	133	110,000
1878-80	•	•	**		•	Khiva, &c.	45	21,000
				52	ye	ars	335	547,000

# E.—WAR IN THE CRIMEA (1854-56).

Took field	English.	French.	Turk.	Russian.	Total.
	98,100	309,400	165,000	888,000	1,460,500
Killed in battle.	2,840	10,330	10,100	30,600	53,870
	2,700	11,100	10,800	42,000	66,600
Died of sickness	18,300	75,400	24,500	374,000	492,200
Returned home.	74,260	212,570	119,600	441,400	847,830

# Shots Fired.

By		Mi	llions.	Killed.	Shots to Kil
English			15	21,000 Russians	700
French .			29	51 <b>,000</b>	590
Russians			45	48,000 Allies	910
			_		
Total	•		89	120,000 men	740

# WARS.

467

		Hospital Re	port.	_	
Adm	itted.	Died.	Recovered.		latio.
	2,060 3,100	21,010 86,480	81,050 349,620	Died. 20 20	Recovered. 80 80
	,160	107,490	430,670	20	80
F.	—An	erican Wa	<b>в</b> (1863–6	55).	
		Northern A	•	•	
	icers. 1,000	White Men. 2,073,000	Coloured. 179,000	Total. 2,336,000	Ratio. 100
Died of wounds	3,930 2,070 1,720	38,790 30,890 121,110	1,520 1,046 26,200	44,240 34,006 149,030	1.9 1.5 6.4
	i, <i>6</i> 00	60,910	4,614	67,124	2.9
	4,680	1,821,300 AIGN OF S	145,620	2,041,600	87:3
G	-CAMP	AIGN OF O	ADUWA (10 Anstrian		1
Took field .	•	. 309,000	330,000		000
Killed	•	. 2,650	11,100		750
Wounded . Missing .	:	. 14,820 . 3,304	29,310 43,750		,130 ,054
Hors-de-com		. 20,774	84,160 245 840		934

Returned home . . . 288,226 245,840 534,066

The Prussians had one officer killed or wounded for 21 men, the Austrians one for 18 men.

H	FRANCO	-GERMAN	WAR	/1870-	-71).

II' — I. 12 12 12 12 12 12 12 12 12 12 12 12 12	COPOBINAL	WAR (1010-	· · · · /·
Took field Reinforced	French. 420,000 290,000	Germans, 780,000 223,000	Total. 1,200,000 513,000
Total .	710,000	1,003,000	1,713,000
Killed			59,000
Died of wounds .	. 36,000	11,000	47,000
sickness	. 45,000	12,000	57,000
Disabled	116,000	89,000	205,000
Prisoners .	. 446,000		446,000
Hors-de-combat .	. 684,000	130,000	814,000
	Killed and W	ounded.	
	French.	German.	Total.
Woerth	. 32,000	11.000	43,000
Mars-le-tour .	. 26,000	16,200	42,200
C	90 800	20,100	48,600
	. 30,000	13,300	43,300
Paris			
Orleans, &c. &c.	. 76,500	57,400	133,900
Total .	. 193,000	118,000	311.000

The Germans fired off 30 million musket cartridges and 363,000 rounds of artillery, with which they killed or mortally wounded 77,000 French, being 400 shots to kill, as compared with 740 in the Crimean war (q. v.). See Battles.

### WATER.

1 cubic foot = 62½ lbs. or 6½ gallons. Do. sea-water = 64 lbs. or 6½ gallons.

1 imperial gallon = 10 lbs. or 277 cubic inches.

224 gallons = 20 cwt. or 36 cubic feet.

A column of water, 12 inches high, 1 inch sq. = 0.43 lb.

A similar column, 1 inch diameter = 0.34 lb.

1 cylindrical foot = 4.9 gallons or 49 lbs.

An inch rainfall = 141 million gallons per square mile.

8 cubic feet snow produces 1 cubic foot water.

Current requires minimum fall, one-10th of inch per mile.

### WATER-POWER.

Niagara = 10 million cubic feet per minute, say 3 million horse-power nominal, or 9 million real.

Ticino (Italy), fall 530 feet, turbines 300 revolutions per

minute, with static pressure 230 lbs. per square inch.

United States have 51,000 water-wheels, with 1½ million horse-power aggregate.

### WATER-SUPPLY.

	Million Gallons Daily.	Gallons per Inhab.	Water per Ton, Pence.	Cost per Annum per Inhab.	Works, Cost, Thousands Omitted.
London	. 145	38	1.60	· 9	£12,100
Paris	. 88	39	1.02	4	2,100
New York .	. 88	70		•••	2,500
Chicago	. 60	120	0.45	7	
Ancient Rome	. 330	160		•••	
Modern	. 200	670		•••	•••
Glasgow	. 26	48		•••	1,550
St. Louis	. 25	70	0.75	7	•••
Marseilles .	. 18	50		•••	•••
Buffalo	. 17	120	0.40	7	•••
Manchester .	. 11	20		•••	1,320
Liverpool .	. 11	20	•••	•••	1,650
Boston	. 10	27	•••	•••	600
San Francisco	. 10	42	1.60	22	•••
Newark	. 10	80	0.25	7	•••
Edinburgh .	. 10	33		•••	510
Dublin	. 7	22	•••	•••	610
Melbourne .	. 7	25		•••	1.600
Hamburg	. 5	12			. 170

# A .- WEALTH OF NATIONS, IN MILLIONS &

WEALTH

				ì	V.	E.	A	L7	r	Ŧ.										4
Total.	8,720	6,323	4,343	2,351	1,593	371	908	286	366	695	282	324	211	39,045	9,495	650	638	335	290	50,750
Sundries.	1,255	280	104	227	77	21	105	326	16	35	12	ŝ	00	2,962	713	41	29	13	14	3,810
Shipping.	120	12		• 6	1	1	23	4	83	2	13	1	64	202	09	12		:	4	283
Bullion.	143	108	**	3.5	41	14	53	17	00	7	-	-	9	773	157	67	10	-	14	957
Merchan- dise.	350	155	09	1.8	22	7	28	19	10	14	7	10	4	1,025	155	18	20	12	25	1,292
Furniture.	1,140	735	440	328	170	40	20	28	22	31	13	35	55	4,433	1,385	20	120	36	24	860'9
Houses,	2,280	1,470	880	929	340	80	140	116	44	623	24	20	44	8,866	2,780	140	240	72	108	12,206
Public Works.	547	442	224	131	99	15	41	125	11	32	13	30	-	2,456	527	30	12	9	88	3,059
Rail-	770	467	308	108	42	12	19	27	10	26	9	33		2,657	1,190	72	12	16	28	4,005
Cattle.	235	231	345	200	57	11	30	33	31	42	21	21	9	1,536	378	35	32	20	99	2,101
Land Nurd Forest.	1,880	2,430	1,940	1,030	740	170	270	220	216	444	173	110	112	14,120	2,150	230	125	122	192	16,939
	•						•	•												
	m														÷			ublic		
	opga											-			tes			Rep		
	United Kingdom	Germany	Russia	Austria.	Spain	Portugal	Belgium	Holland	Denmark	Sweden	Norway	Switzerlan	Greece	Europe	United States	Canada	Mexico	Argentine	Australia	Total

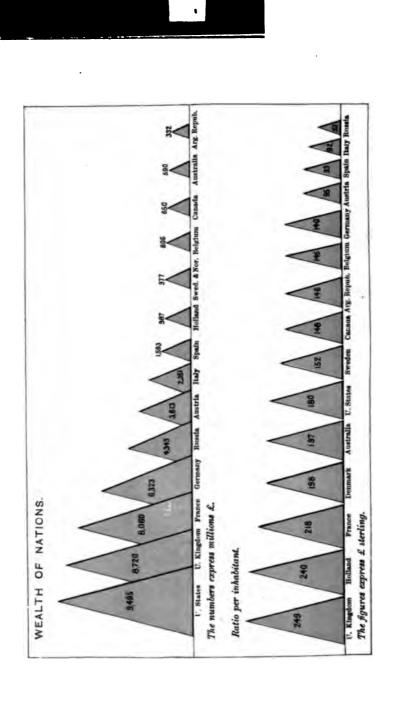


# 470

WEALTH.

# B.-Wealth of United States.

		Millio	ns £.		Per I	nhabita	nt, £
	1850.	1860.	1870.	1880.	1860.	1870.	1880
Maine New Hampshire Vermont Rhode Island Connecticut Massachusetts	26 22 19 17 32 119	39 32 25 28 92 169	72 53 49 62 161 443	90 79 72 103 148 495	60 96 77 160 201 135	110 160 147 275 298 303	143 225 216 365 240 272
New England	235	385	840	987	122	240	247
New York	224 42 150 4 46	384 98 295 9 79	1,352 196 792 20 134	1,726 191 1,188 21 158	99 147 101 80 115	304 215 226 165 168	338 170 280 150 168
Middle States	466	865	2,514	3,284	105	258	286
Virginia . North Carolina . South Carolina . South Carolina . Georgia . Florida . Alabama . Mississippi . Louisiana . Texas . Arkansas . Kentucky . Tennessee . The South . Ohio . Illinois . Missouri . Indiana . Iowa . Michigan . Wisconsin . Minnesota . Kansas . Nebraska	89 47 60 5 48 48 49 11 8 63 42 540 105 32 22 8 42 5 12 9	166 75 114 133 15 103 125 76 46 138 103 1,222 249 181 100 51 53 57 11 62	125 54 44 56 9 42 44 67 33 32 126 104 736 465 441 267 264 149 149 146 48 40	130 777 411 75 9 566 433 611 1066 355 133 117 883 651 608 281 198 388 2805 127 77 77 73	105 75 163 126 105 107 159 180 126 104 120 92 119 107 105 88 82 77 70 66 57	75 50 62 47 42 52 51 40 65 65 65 174 173 155 160 122 122 139 100 115	61 55 41 49 33 44 40 64 44 80 78 206 199 128 153 234 156 152 77 73
Colorado			4	15		98	76
The West	233		1.987	2,887	90_	155	170
California Oregon	1	43 6	133 11 6	272 18 8	113 120	239 122 151	328 105 135
Pacific	6	49	150	298	116	215	270
Territories	6	21	47	- 56	82	103	72
Nominal total . Roads, lands, &c	1,486 200	3,366 500	6,274 800	8,395 1,100	107 16	160 21	166
Total	1.686	3.866	7.074	9.495	123	181	188



WEALTH.

# B.—Wealth of United States.

		Millio	as A.		Per I	nhabita	nt, L
	1850.	1860.	1870.	1890.	1860.	1870.	1880.
Maine	26	39	72	90	60	110	143
New Hampshire	22	32	53	79	96	160	225
Vermont	19	25	49	73	77	147	216
Rhode Island	17 32	28 92	62	103	160	275 298	365 240
Connecticut	119	169	161 443	148 495	201 135	303	272
37 4	235	385	840	987	122	240	247
		384					
New York	224 42	384 98	1,352 196	1,726 191	99 147	304 215	338 170
Pennsylvania	150	295	792	1,188	101	226	280
Delaware	100	~9	20	21	80	165	150
Maryland	46	79	134	158	115	168	168
Middle States	466	865	2,514	3,284	105	258	286
Virginia	89	166	125	130	105	75	61
North Carolina	47	75	54	77	75	50	55
South Carolina	60	114	44	41	163	62	41
Georgia	70 5	134 15	56	75 9	126 105	47	49 33
Florida	48	103	42	56	107	42	44
Mississippi	48	127	44	43	159	52	40
Louisiana	49	125	67	61	180	91	64
Texas	ii	76	33	106	126	40	ĞĞ
Arkansas	8	46	32	35	104	65	44
Kentucky	63	138	126		120	96	80
Tennessee	42	_103	_104	117	92	83	78
The South	540	1,222	736	_883	119_	65_	_58
Ohio	105	249	465	651	107	174	206
Illinois	32	181	441	608	105	173	199
Missouri	28	104	267 264	281	88	155 160	128
Indiana	42	110 51	149	304	82 77	122	153 123
Michigan	12	53	149	388	70	122	234
Wisconsin	19	57	146	205	l fi	139	156
Minnesota		11	48	127	66	109	152
Kansas		6	40	77	55	110	77
Nebraska		2	14	33	70	115	73
Colorado	<u> </u>	<u> </u>	4	15		_ 98	_76
The West	$-\frac{233}{}$		1.987	2,847	_90_	155_	170
California	5	43	133	272	113	239	328
Oregon	1	6	11	18	120	122	105
Nevada	l		6	8	\ <del>_:</del> :-	151	133_
Pacific	6	49	150	208	116_	215_	270
Territories	6	21	47	56	_82_	103	72_
Nominal total .	1,486	3,366	6,274	8,395	107	160	166
Roads, lands, &c	200		800		16	21	2.3
Total	1,686	3,866	7,074	9,495	123	181	188



# WEALTH.

# C.—RATIO OF AMERICAN WEALTH.

	•					
States	١.		1850.	1860.	1870.	1880.
New En	gland		15.7	11.4	13.4	11.8
Middle	•		31.1	25.6	40.0	39.1
South			36.6	36.4	11.8	10.5
West			15.8	24.5	<b>3</b> 1. <b>7</b>	34.4
Pacific		•	0.8	2·1	3·1	4.2
Union			100.0	100.0	100.0	100.0

# D.—Components of American Wealth.

# Millions £.

	Btat		Land.		Railways.			
New En	glaı	nd.	123	26	71	375	392	987
Middle	•		510	82	325	1,291	1,076	3,284
South			351	87	136	212	97	883
West			1,092	171	596	832	196	2,887
Pacific	•	•	74	12	62	70	80	298
Union	ı.		2,150	378	1,190	2,780	1,841	8,339

# E.—Australian Wealth.

	Millions &			Per Inhabitant.		
	1860.	1870.	1882.	1860.	1870.	1882.
Lands	 52 29 7 53 49	89 47 27 90 67	192 66 58 162 112	£41 23 6 42 39	£45 24 14 45 34	£64 22 19 54 39
Total	 190	320	590	£151	£162	£198

		Millions £, 1882.						
	Land.	Cattle.	Houses,	Rail- ways.	Sundries.	Total.	Per Inhab.	
New South Wales Victoria New Zealand South Australia Queensland Tasmania West Australia	63 55 36 25 7 5	25 11 9 5 13 2	51 57 28 13 8 4	16 17 11 5 6	35 38 18 11 6 3	190 178 102 59 40 16	£241 198 205 197 176 130 148	
Total	192	66	162	58	112	590	£198	

# F.-GROWTH OF BRITISH WRALTH.

Year.				Milli	Per			
Yes	ır,		Lands,	Houses.	Sundries.	Total.	Inhab.	Kingdom.
1660		Ų.	144	46	60	250	£45	England.
1703			270	87	133	490	79	,,,
1774		14	568	184	348	1,100	136	1 (5)
1800			820	240	680	1,740	165	G. Britain.
1812			1,066	355	769	2,190	127	U.Kingdom
1840			1,680	770	1,580	4,030	150	"
1860			1.840	1.164	2,556	5,560	191	**
1882			1,880	2,280	4,560	8,720	249	"

		Millions &				Aliquot Parts.				
	1812.	1840.	1860.	1882.	1812.	1840.	1860.	1882.		
Land	1,066	1,680	1,840	1,880	48.7	41.7	33·1	21.5		
Cattle, &c	260	380	460	414	11.9	9.4	8.3	47		
Houses	355	770	1,164	2,280	16.2	19.1	20-9	26 1		
Railways .		33	348	770		0.8	6.3	8.8		
Shipping .	15	23	44	120	0.7	0.6	0.8	1.4		
Merchandise	50	70	190	350	2:3	1.7	3.4	4.0		
Furniture .	180	390	580	1.140	8.2	9.7	10.4	13.1		
Bullion	23	61	105	143	10	1.5	1.9	16		
Loans	105	230	420	1.060	4.8	5.7	7.5	12-3		
Sundries	136	393	409	563	6.2	9.8	7.4	66		
Total	2,190	4,030	5,560	8,720	100 0	100 0	1000	100 0		

# G.—DISTRIBUTION OF BRITISH WEALTH.

	Millions £ in 1801.				Millions £ in 1882.				
	Eng-	Scot- land	Ire- land.	U. King- dem.	Eng-	Scot- laud.	Ire- land.	U. King dom.	
Lands	718	102	170	990	1,403	207	270	1.880	
Cattle	80	10	15	105	143	40	52	235	
Houses .	240	30	36	306	2,007	213	60	2,280	
Furniture	120	15	18	153	1.004	106	30	1,140	
Railways .					636	98	35	769	
Sundries .	366	53	57	476	1,985	326	105	2,416	
Total .	1.524	210	296	2.030	7,178	990	552	8,720	

The wealth	ratios of the	three ki	ingdoms	appears thu	18:
Authority.	England.	Scotland.	Ireland.		Date.
Legacy tables	. 82.3	12.2	5.2	100 0	1877
Income-tax .	. 84.2	9.6	6.2	100 0	1890
Mulhall .	. 82.3	11.4	6:3	100.0	1863
General average	s . 82·9	11.1	6.0	100.0	•••



# WEALTH.

# H.—CLASSIFICATON OF WEALTH AMONG HOLDERS.

According to the legacy and succession returns for 1840, the wealth of the United Kingdom appears to have been held thus:—

Class.	Families.	Millions £.	Per Family.
Rich	. 86,833	2,507	28,820
Middle .	. 782,100	1,126	1,439
Working .	. 4,341,067	191	44
Total .	5.210.000	3.824	735

According to the returns for 1877, a great diffusion of wealth had taken place:—

Class, Rich .	-	Families. 222,500	Millions £. 5.728	Per Family. 25.803
Middle .		1,824,400	1,834	1,005
Working .		4,629,100	398	86
Total .		6,676,000	7,960	1,194

The average wealth per inhabitant in the three kingdoms rose between 1840 and 1877 as follows:—

		1840.	1877.
England		£210	£262
Scotland		101	277
Ireland		38	83

## I.-WEALTH, DEBT, AND TAXATION COMPARED.

		Millions	e.	Ratio.			
	Wealth.	Debt.	Taxation.	Wealth.	Debt.	Taxation	
U. Kingdom .	8,720	763	124	100	8.75	1.43	
France	8,060	911	145	100	11.30	1.80	
Germany	6,323	229	104	100	3.63	1.65	
Russia	4,343	553	85	100	12.70	1.96	
Austria	3,613	419	74	100	11.64	2.05	
Italy	2,351	522	74	100	22.22	3.15	
Spain	1,593	390	41	100	24.53	2.56	
Portugal	371	94	8	100	25.40	2.16	
Belgium	806	62	14	100	7.70	1.74	
Holland	987	80	10	100	8.08	1.01	
Denmark	866	10	4	100	2.80	1.09	
Swed. & Nor.	977	20	10	100	2.04	1.02	
Greece	211	18	3	100	8.60	1.43	
Europe	38,721	4,071	696	100	10.52	1.80	
United States	9,495	833	160	100	3.49	1.68	
Total	48,216	4,404	856	100	9.14	178	

In the table of Wealth, Debt, and Taxation on the preceding page, the debt does not include local debts, but the taxation includes all taxes, rates, and revenues, national and local.

### WEIGHTS AND MEASURES.

Acre, 4,840 square yards.
Almud, Turkish, 1'14 gallons.
,, Portuguese, 3'74 gallons.
Amphora, Roman, 7 gallons.
Ardeb, Egyptian, 220 lbs.
Arpent, 0'85 acre.
Arroba, 25 lbs., 3½ gallons.
Bale, American, 485 lbs.
,, Brazilian, 156 ,,
,, Egyptian, 600 ,,
,, Indian, 376 ,,
Barrel, 36 gallons.
,, American, 30 gallons.
,, Dutch, 41 ,, Last, German, 2 tons.

" Norwegian, 3j tons.
League, Dutch, 6,380 yards.
" Spaniah, 6,180 "
Litre, 100 = 1 hectolitre.
Load, bricks, 500.
" corn, 40 bushels.
" hay, 20 cwt.
" straw, 10 cwt.
" wood, 50 cubic feet.
Maund, Indian, 30 lbs.
Metre, 3 28 feet.
Metzen, 3 = 5 bushels.
Mile, 1760 yards. Dutch, 41 32 Mile, 1760 yards. " German, 8,140 yards. " Swedish, 11,770 " French, ,, German, 39 ,, flour, pork, 200 lbs. apples, 150 lbs. fish, 1000 number. ٠, ", Turkish, 1,870 Morgen, 5 = 3 acres. Oke, 4 = 11 lbs. ,, \*\* Bonnier, French, 3 acres. Bushel, barley, 54 lbs. ,, oats, 40 ,, rye, 59 ,, Palm, 3 inches ram, 5 mones.
Parasang, 4 miles.
Peck, 2 bushel.
Perch, 54 yards.
Picul, 133 lbs.
Pint, 8 = 1 gallon.
Pipe, 126 gallons.
Pood, 36 lbs.
Pott, Norwegian, 100 = 21 gallons.
Ponnd, 16 conness. rye, ,, wheat, 611,, Catty, 3 = 4 lbs. Catty, 3 = 4 lbs.
Chetvert, 5½ bushels.
Cord, wood, 125 cubic feet, 2½ t.
Cuartillo, 9 = 1 gallon.
Cubit, 18 inches.
Dessiatine, 10 = 27 acres.
Eigen 19, 10 = 27 acres. Pound, 16 ounces. Quarter, 8 bushels. Quintal, 110 lbs. Eimer, 12 gallons. Fanega, 4 bushels. metrical, 220 lbs. Fanegada, 10 = 16 acres. Fathom, 6 feet. Salma, 4½ acres.
Scheffel, 1 45 bushel.
Septier, 4 = 17 bushels.
Sextarius, 1½ pint. Foot, cubic, 52 = 1 ton. water, 62 lbs., 61 gals. Furlong, 220 yards.
Gallon, 277 cub. inches, 10 lbs. water. Span, 9 inches. Grammes, 453 = 1 lb. Hectare, 2 47 acres. Stadium, 120 yards. Stère, 35 cubic feet wood. Stoup, d gallon. Toise, 64 feet. Ton, 2240 lbs. Hectolitre, 22 gallons, 22 bushels. Hogshead, 63 gallons. Joch, 1.43 acre. Kanna, 100 Swedish = 58 gallons. ,, 100 German = 44 ,, Kilogram, 2-20 lbs. American, 2000 lbs. Tunnland, 1½ acre.
Tunna, 4 bushels.
Vedro, 10 = 27 gallons.
Verst, 100 = 66 miles. Kilometer, 100 = 62 miles. Klafter, 2 tons wood. Knos, 2000 yards.

	:	B.—Gr	AIN.			
Cubic	Bushel. C		lecto- Sch	offel. Me	stsen. C	hetvert
Foot. Cubic metre 35:3	27.60		Trie.		6.50	5.00
Bushel . 1.3	1.00					0.18
Quarter . 10'4	8.00				4.80	1:44
Ton 52.0	40.00		4.50 28	300 2	4.00	7.20
Hectolitre . 3.5	276				1.65	0.20
Scheffel . 1.9	1.45				0.86	0.26
Metzen . 2.2 Chetvert . 7.0	1.66 5.55	0·21 0·70			1·00 3·30	0·30 1·00
		.—Len				
Knot.	file. Kilom.	Verst.	K	not. Mile	. Kilom.	Verst.
Mile . 0.88 1	00 1.61			55 0.6		0.93
Kuot . 1 00 1	1.14 1.83	171   V	erst. 0	·58 0·60	3 1.07	1.00
		).—Liqu				
1	be. Cubic	Litre.	Hecto- litre.	Eimer.	Barrel.	Hogs-
Gallon	10 0.14	4.5	0.045	0.080	0.027	head. 0.016
Litre	2-2 0-03	iŏ	0.010	0.018	0.006	0.004
	20 3.10	100	1.000	1760	0.600	0.350
	24 175	56	0.560	1.000	0.340	0.500
	6 5 00 00 00 00 00 00 00 00 00 00 00 00 0	160	1.600	2.880	1 000	0.576
Hogshend . 63	30 8· <b>80</b>	284	2.835	5.000	1.710	1.000
	E.	-Sund				
	Lbs. Cwt.	French Ton.	American Ton.	Kilog.	Pood.	Picul.
English ton . 2	,240 <b>20:0</b> 0		1.120	1,018	62 <b>·2</b> 0	16.80
	112 1.00		0.056	51	3.11	0.84
	110 0·98 204 19·64,		0·055 1·100	1.000	3·05 61·00	0.82
	000 17.86		1.000	1,000 910	56:40	16 50 15 00
	2 20 00 02		0.001	1.0	0.06	0.016
Pood	36 0.32		0.018	16.3	1.00	0.27
Picul	133 1.20	0.061	0.067	60 0	3.67	1.00
	F	-Superi			_	_
<b>8</b> q.	Yds. Acre.	Morgen.	Hectare.	Dessia- tine.	8q. Kilom.	Sq. Mile.
Acre 4	,840 1.00	1.56	0.405		0.0040	0.0016
Morgen 3	,122 0·65	1.00	0.560		0.0026	0.0010
	,914 1.43	2.23	0.576		0.0057	0.0022
Hectare 12	,000 2:47	3.84	1.000		0.0100	0.0039
	,100 2·70 .000 250	4·20 390	1 093 100		0·0091 1·0000	0.0035
Sq. kilom 1,190 Sq. mile . 3,097		1,000	260	235	2.60	10
• •					a 00	10
	G.—OLD  wine gall			UR <b>ES.</b> Corn gallo	n R	ahel.
Name. Da	cubic inc	hea cubic	inches.	ubic inch		inches.
	25 217		266	266	2	,130
	53 219		268	268	2	,148
Henry VII 14	96 224 31 231		280 282	280 282		,240
Henry VIII. 15	oı 231		202	282	2	,256

# WHEAT.

# A. -Production and Consumption.

				Consump			
			Crop.	Consump- tion.	Surplus.	Deficit.	tion, per Inhab. Lbs.
United Kingd	om		76	206		130	830
France .			270	320	•••	50	455
Germany .		-	100	140	•••	40	166
Russia .	•	•	210	160	50		120
Austria .	•	•	115	105	10	•••	160
Italy .	•	•	140	145	10	 5	282
	٠				•••	Đ	
Spain and Por	cug	a.	140	185	5	•••	360
Belgium and E	Ion	and	24	54	•••	80	280
Scandinavia			7	12	•••	5	80
Turkey, &c.		•	85	70	15	•••	340
_					_		
Europe			1,167	1,847	•••	180	235
United States		•	440	290	150	•••	305
Canada .			46	36	10	•••	370
Australia			35	20	15	•••	380
India .		-	270	240	30	•••	60
Egypt .	•		15	10	5		110
Various .	:	·	40	70		30	
					_		
Total			2,013	2,013	•••	•••	•••

For acreage, see Grain.

# B.—PRICES IN ENGLAND (580 YEARS).

	Shillings	per Quarter,	8 Bushels.	Years.		
Period.	Average.	Maximum.	Minimum.	Highest.	Lowest	
1301–50	18	48	10	1316	1339	
1351-1400 .	16	32	9	1369	1392	
1401-50	.   15	i 62	6	1434	1404	
1451-1500 .	10	35	4	1497	1454	
1501-50	20	38	6	1521	1509	
1551-1600 .	22	63	15	1597	1568	
1601-50	42	. 80	27	1648	1604	
1651-1700 .	47	: 70	24	1662	1687	
1701-50	39	74	23	1709	1744	
1751-1800 .	66	83	27	1796	1781	
1801-50	61	114	39	1812	1835	
1851-81	51	64	89	1867	1851	

The above prices are according to weight of silver.



# WHEAT.

# C.—Nominal Prices in France.

Period.	F	ence.	Period.	Pence.	Period.	,	Pence.
1250-1300		4	1551-1600	17	1751-1860		51
1301-1400		6	1601-1650	39	1801-1820		70
1401-1500		8	1651-1700	22	1821-1850		67
<b>1501-</b> 1550		5	1701-1750	36	1851-1880		77

# D.—ALL WORLD PRICES (60 YEARS).

# Pence per English Bushel.

	•					
	1821-30.	1831-40.	1841-50.	1851-60.	1861-70.	1871 - 80.
Great Britain	90	84	80	82	78	71
France	65	67	69	78	75	79
Germany .	49	46	56	70	68	82
Austria .	39	35	45	68	78	70
Russia	47	44	42	65	68	67
Europe	58	55	58	72	78	74
United States	60	68	58	79	75	65

# E-WHEAT SUPPLY OF UNITED KINGDOM.

# Annual Consumption, Million

				Bushels.	Price, Consumpti		
Period. 1811–30			British.	Imported.	Total.	Shillings per Quarter. 74	Lbs. per Inhab, 258
1831-50			102	16	118	55	255
1851-60			103	47	150	54	801
1861-70			102	73	175	52	821
1871-80			77	114	191	48	325
1881 .			72	135	207	46	830

# F .- Importation into United Kingdom (Annual).

_	Millio	ons of Bush	els,		Ratio.		
From	1861-70.	1871-80.	1881.	1861-70.	1871-80.	1881.	
America Russia	22 19 32	55 23 36	85 10 40	30 26 44	48 20 32	63 7 30	
Total	73	114	135	100	100	100	

# G.—Average Yield in United Kingdom.

Period.		Acres,	Million Bushels,	Bushels per Acre.
1850-60		3,754,000	110	29.3
1861-70		3,770,000	109	28·9
1871–80		3,470,000	84	24.2
1881 .		3,070,000	79	260

Deducting 2 bushels per acre for seed, the rest was available for food.

# WIDOWED.

	Percen	tage in Pop	Percentage in Marriages.		
	Widows among Females.	Widowers among Males.	Both, General Average.	Widows as wives.	Widowers as husbands
England .	 7	4	5.8	9	14
France	111	6	8.4	8	12
Germany .	8	4	5-8	9	15
Austria .	7	8	5.8	11	18
Italy	] ġ.	4	6.6	8	14
Spain	9	5	6.8	11	17
Switzerland .	9	5	7-2	7	12
Belgium .	7	4	5.6	8	13
Holland .	8	ā	6.1	9	16
Scandinavia	1 7	4	5-2	6	l ii
Average .	8	l š	5.8	8	14

## WILD BEASTS.

A.—In France 1225 wolves were killed in 1882, for which the Government paid £6000. Game licences, 347,000 per annum.

B.—Game licences in Germany, 146,000; slaughter, 20,000 foxes, 30,000 deer, 2,000,000 harcs, 3,000,000 partridges.

# C .- Annual "Battue" in Sweden.

		1827-36.	1850-59.	1867-76
Bears .		135	118	110
Lynxes		243	140	91
Lynxes Wolves	-	542	162	53
Foxes .		7.882	5,396	•••

D.—The Russian forests contained in 1880 over 170,000 wolves, which devoured 200 children or travellers per annum.

E	Λτ	JSTR	IAN	Lar	ge Ga	мв Ки	LLED	PE	A	nnc <b>u</b> .	
Bears											
Lynxes			•	•	200	Foxes	•	•	•	•	8,000
Besides	<b>30</b> 0	0 ti	ger-c	ats	and va	rious o	ther	kin	ds.		
						person				tigers	and

180 by crocodiles yearly.
G.—In India 21,000 persons and 53,000 cattle are killed yearly by tigers, snakes, &c. The Indian Government pays



## WIND.

£10,000 per annum for killing 20,000 wild beasts and 120,000 snakes.

H.—In Cochin-China the French killed in 1882 no fewer than 109 tigers and 25 panthers.

## WIND.

# A .- VELOCITY AND PRESSURE.

Feet per Second.	Miles per Hour.	Pressure, Lbs. per Sq. Foot.	Feet per Second.	Miles per Hour.	Pressure, Lbc. per Sq. Foot.
5	31	l oz.	80	54	16 lbs.
10	7	4 02.	90	61	20 <del>1</del> ,,
20	14	1 lb.	100	68	25 ,,
80	20	21 lbs.	110	75	30 <del>1</del> ,,
40	27	4,	120	82	86 ,,
50	84	6 <u>1</u> "	180	88	421 ,,
60	41	9 ,,	140	95	49 ,,
70	48	121 ,,	150	102	56 "

The average pressure in England is 257 miles daily, or 103 per hour, say, 15 feet per second, equal to 10 oz. per sq. foot.

# B.—MEAN VELOCITY AT PLYMOUTH (1841-42).

# Feet per Second.

January February	13 <sup>-97</sup> 14 <sup>-63</sup>	June . July .	. 10 <sup>-90</sup>	September October . November December	. 15-29 . 14-96
1st Qu	arter	. 13.80	8d Quarter	r 124	10
		. 11.80		14.2	

# C .- MEAN AMOUNT OF WIND, PLYMOUTH 1841-43.

Wind.			Spring.	Summer.	Autumn.	Winter.	Total.
N.E			143	2		133	278
E.N.E.			134	18	102	134	883
E			821	124	130	25	600
S.E			•••		•••	6	6
8.8.E.		·	19	•••	3	7	29
8			657	86	798	545	2,086
8.8.W.			725	689	476	275	2,165
S.W.			•••	•••	34	•••	34
W.N.W.			50	65	128	99	842
NW.			59	46	17	•••	122
N.N.W.	•		•••	58	•••	•••	58
Total			2,108	1.083	1.688	1.224	6.103

# WINDMILLS-WINDOWS.

# D.—London Winds, 1813-30.

				Do	ıyı.		
				N. to E.	E. to 8.	8. to W.	W. to N.
January				6.0	5.6	7·1	10-0
February				4.2	5.0	7∙8	9-5
March				5.8	4.9	8.3	10.5
April				6.5	6.5	6.4	9-2
May		-		7-9	6.8	6.8	7-9
June		-		7-2	4.3	6.7	10.5
July.		-		4.4	8.6	8.8	12-6
August				5.2	8.5	8-6	13-0
Septembe	r	•		6.3	5.5	8.8	8:3
October	•	•	:	5.5	6.6	8.4	9.5
Novembe	r	·	•	4.5	4.4	9.3	107
Decembe		·	:	5.4	5.5	9.5	93
Total				<b>6</b> 8·9	62.2	106.5	1210

WINDMILLS.—Holland has 10,100 windmills, representing a value of 20 millions sterling, with an aggregate force of 52,200 horse-power. Cost of drainage, 10 pence per acre, with a lift of 3 feet; 20 pence at 6 feet, and so on. The average area drained by each mill in Holland is 310 acres, each lifting 150,000 tons or 33 million gallons water daily. See *Pumps*.

# WINDOWS.

# A.—Great Britain (WITHOUT IRELAND).

	Tho	usands Omi	Windows per		
Year.	Windows.	Houses.	Population.	House	Inhabitant.
1801	10,300	1,781	10,501	5.8	0.98
1850	21,900	3,648	20,960	6-0	1 05
1882	46,100	5,475	30,720	8.4	1.51

# B .- WINDOW DUTY IN GREAT BRITAIN IN 1850.

		Houses.		Duty per Annum, £.			
Windows,	England.	Scotland	Great Britain.	England.	Scotland.	Great Britain.	
8 to 10	156,000	15,000	171.000	167,000	15,000	182,000	
11 to 20	216,000	15,000	231,000	687,000	48,000	735,000	
21 to 30	48,000	4.000	52,000	366,000	25,000	391,000	
Over 30	30,000	1,600	31,600	404,000	37,000	441,000	
Total .	450,000	35,600	485,600	1,624,000	125,000	1,749,000	

480



# WINDOWS-WINE.

# C.—WINDOW DUTY IN ENGLISH TOWNS (1850).

	Amount	Shillings per House.		Amount	Shillings per House.
Liverpool .	£33,000	58	Bristol	£15,000	64
Manchester .	22,000	55	Plymouth .	12,000	54
Bath	22,000	118	Newcastle .	8,500	61
Brighton .	18,000	101	Leeds	8,100	65
Birmingham	16,000	59	Norwich .	7,000	78

The ratio per house is only on the number of houses taxed.

# D.-WINDOWS IN FRANCE.

Year.					Th	ousands On	nitted.	Windows per		
	X	ar.			Houses.	Windows.	Population.	House.	Inhabitant,	
1826		•		•	6,484	28,580	31,120	4.4	0.92	
1836					6,805	30,144	33,410	4.5	0.90	
1846					7.146	85,211	35,160	4.9	1.00	
1856					7,633	88,446	36,540	5.0	1.05	
1866					7.811	43,115	38,330	5.5	1.12	
1882					8,813	49,394	37.672	5.6	1.31	

### WINE.

## A.—PRODUCTION.

		Acres, Thousands Omitted,	Millions Gallons.	Value, Millions &	Gallons per Acre.
France		. 5,150	720	45	140
Italy.		. 4,650	580	80	125
Spain		. 2,720	820	19	118
Portugal		. 420	80	10	190
Austria		. 1,580	310	15	196
Germany		. 305	70	4	230
Russia		. 110	19	2	170
Europe		. 14,935	2,099	125	133
United St		130	21	2	160
Algeria		. 51	9	1	176
South Afr	ica	. 18	4)		220
Australia		. 15	2 (	•	130
Argentine	Re	public 13	2 (	2	160
Various		. 60	9)		150
	-				
Total		. 15,222	2,146	130	140

The production is declining in Europe, but increasing in Algeria, United States, and Argentine Republic. Good artificial wine is made in France, 10 degrees alcohol.

### B.—Consumption.

U. Kingdom France . Germany . Russia .	Million Gallons. . 15 . 780 . 120	Gallons per Inhab. 0.44 21.00 2.70 0.30	Million Gallona Italy 480 Spain 220 Portugal 60 United States 27	Gallons per Inhab. 17:40 13:60 13:30 0:51
Austria .	. 800	7-90	Various . 120	

Rudesheimer is worth £20 a gallon. Prince Woronzoff sells his Tokay, 220 years old, at £9 a bottle. Champagne vintage averages 20 million bottles, of which France exports 17 millions. The Xerez vineyards, 15,000 acres, produce 4 million gallons yearly of sherry. Wine loses strength after 200 years.

# C .- French Vintage and Wine Trade

# Annual Average.

Period.	Acres, Thousands Omitted.	Vintage, Million Gallons.	Import, Million Gallons.	Export, Million Gallons.	Consump. Gallons per Inhab.	Price. Pence per Galion.
1810-12	. 4,064	455	•••	8	16	14
1830-32	. 5,015	502	•••	18	16	17
1840-42	. 5,230	790	•••	24	23	16
1850-52	. 5,450	920	•••	38	25	21
1860-62	. 5,510	703		48	18	23
1870-72	. 6,560	1,010		70	25	20
1880-82	. 5,150	720	140	55	21	27

# D.—Consumption in United Kingdom.

Year.		Gallons, Thousands Omitted,	Duty, Shil- lings per Gallon.	Consumption, Gallons per Inhabitant,
1801		6,877	10	0.45
1811		5,630	14	0.32
1821		4,702	14	0∙23
1831		6,220	6	0.26
1841		6,185	6	022
1851		6,282	6	0.53
1861		10,693	1	0.36
1871		16,145	1	0.53
1881		15,550	1	0.44

WOOD.—See Timber.



## WOOL.

# WOOL.

11 002.					
	A.—Ann	TUAL CL	IP (1880).		
	Wool, Million Lbs.	Sheep, Millions,	Lbs. Wool per Sheep.	Value of Clip, Millions &.	Value of Fleece, Pence.
United Kingdom	. 112	28	4.0	6.8	59
France	. 88	23	3.8	5· <b>3</b>	56
Germany .	. 80	25	3.2	4.8	46
Russia	. 180	49	3.7	10.0	49
Austria	. 65	21	3·1	3.6	40
Italy	. 21	7	3.0	1-2	41
Spain and Portug	zal 82	25	8.3	4.9	46
Belgium, Holland		15	<b>3</b> ·1	2.8	45
Europe .	. 665	193	<b>8·4</b>	89.0	49
United States	. 210	41	5.0	11.7	70
River Plate .	. 260	76	8.4	6.4	20
Canada	. 12	3	4.0	0.7	54
Australia .	. 390	66	5.9	19.5	72
Cape Colony .	. 52	11	4.7	2.8	60
India	. 26	8	8.3	1.5	45
Algeria	. 82	9	3.6	17	47
Total .	. 1,647	407	4.1	83.3	50

# B .- INCREASE OF WOOL-CROP.

## Millions of Lbs., Annual Clip.

Year.	Europe.	U. States.	R. Plate.	Cape.	Australia.	Total.
1800	420	8	1	•••	•••	429
1830	490	18	6	2	3	519
1840	510	52	15.	10	14	601
1850	630	90	25	18	43	806
1860	715	112	56	28	70	981
1870	807	154	167	46	197	1,871
1880	665	210	260	52	390	1.577

This does not include Canada, India, &c. See Table A.

# C.— Messes Bowes's Tables. Annual Clip, Millions of Lbs.

		Unwashed	i.	Equivalent Washed.		
	1860.	1874.	1882.	1860.	1874.	1882.
Australia . Cape . River Plate	60 26 40	222 49 207	352 54 240	85 15 15	124 34 72	197 88 84
Total .	126	478	646	65	230	319

The figures for 1860 are too low, the shipments from Australia that year exceeding 69 million lbs.

# D.—Consumption in Manufacture (1880).

		•		•	,
	Million	Lbs. per	Manufacto	res, Thousand	ls Omitted
	Lbs.	Inhab.	Exported.	Home Use.	Total
United Kingdom .	888	9.8	£20,600	£25,500	£46,100
France	836	8.8	18,600	29,700	43,300
Germany .	190	4.2	7,500	18,800	26,300
Russia	170	2.2	•••	28,000	23,000
Austria	80	<b>2</b> ·1	1,100	9,600	10,700
Italy	83	1.3	•••	4,800	4,800
Spain and Portugal	70	8.4	•••	8,500	8,500
Belgium	98	20.5	8,800	4,500	7,800
Other countries .	20	•••	•••	2,100	2,100
Europe .	1,380	4.2	£46,100	£124,500	£170,500
United States	. 820	6.6	•••	48,000	43,000
Total .	1,650	4.5	£46,100	£169,500	£213,500

One pound of washed wool produces a yard of cloth.

# E.—Consumption of Woollen Manufactures.

			M	illions £.	Per Inhab., Shillings.	Mil	llions £.	Per Inhab., Shillinga
U. Kingd	on	ı .		26	15	Spain and Port.	9	9
France.				30	16	Belgium	4	15
Germany				19	9	Holland	3	15
Russia .				23	6 i	Scandinavia .	6	14
Austria				10	6	United States .	50	19
Italy .				5	4 .	Colonies, &c	28	

# F .- WOOLLEN INDUSTRY IN GREAT BRITAIN.

	Wool Co	nsumed, Mil	Value of Manufactures, Millions £.			
Year.	British.	Foreign.	Total.	Exported.	Home Use.	Total.
1780 .	60	5	65	2.6	9:2	11.8
1800 .	70	9	79	6.9	8.8	15.7
1820 .	75	10	85	5.6	14.2	19.8
1830 .	80	80	110	4.8	17:8	22.8
1840 .	85	44	129	5.8	20.7	26.5
1850 .	110	48	158	10.1	19.6	29.7
1860 .	120	104	224	16.0	21.5	37.5
1870 .	138	171	309	31.4	23.3	54.7
1880 .	112	226	338	20.6	25.5	46.1



# WORK-WRECKS.

485

# WORK.

# A .- FOOT-TONS OF ENERGY.

Walking 1 mile 171	Dock-labourer's day's work . 325
, 4 miles 70	Pile-driving 332
Carrying 60 lbs. 1 mile 25	Pavior
" " 4 miles 100	Turning a winch 374
Pedlar's day's work 303	Man's ordinary work 300
Convict's ,, 310	Very hard do 400

# B.—Energy of Nations (1885).

	Mil	lions of F	Foot- Tons	Cost of 1000 Foot-		
	Hand.	Horse.	Steam.	Total.	Inhab.	Tons, Pence.
United Kingdom .	2,310	8,700	38,960	49,970	1,380	8.4
France	2,970	8,500	16,150	27,620	720	14.2
Germany	3,330	10,100	19,800	33,230	716	11.6
Russia	6,300	48,600	6,340	61,240	710	12.6
Austria	2,850	11,300	5,800	19,950	520	16.1
Italy	2,160			6,420	230	17.8
Spain	1,260	1,980	2,210	5,450	340	13.8
Portugal	360					21.2
Switzerland	210	330	1,300	1,840	670	11.2
Belgium	420	850	3,410	4,680	880	10.1
Holland	300	840	920	2,060	502	14.7
Scandinavia	630	2,900	1,830	5,360	630	10.2
Europe	23,100	96,350	99,220	218,670	706	12.1
United States	3,480	32,100	42,160	77,740	1,440	9.8
Total	26,580	128,450	141,380	296,410	802	12.0

# WRECKS.

# A .- Tonnage Lost Yearly.

	Steam.	Sailing.	Total.	Ratio to Shipping, Per Cent.
British	. 90,000	170,000	260,000	3.50
French	. 7,000	22,000	29,000	3.60
German	. 6,000	40,000	46,000	3.80
Russian	. 3,000	18,000	21,000	4.00
Austrian	. 3,000	9.000	12,000	4.00
Italian	. 1,500	27,500	29,000	2.90
Spanish	. 3,500	13,500	17,000	3.70
Dutch	. 3,000	14,000	17,000	4.05
United States	. 16,000	112,000	128,000	4:90
Various	. 59,000	130,000	189,000	4.00
Total	192,000	556,000	748 000	8:80

# B.-LLOYD'S REGISTER.

Vessels missing				Average, 1806–19. 98	Year 1860. 101
	•	•	•	. 70	
Sunk by collision		•	•	. 182	205
Burnt				. 191	229
Stranded .		•		. 1,171	1,108
Waterlogged, &c.	•	•	•	. 584	550
Total .				. 2.171	2,193

# C.—Loss of Value and Life by Shipwrecks (per Amnum).

Flag.				Shi	ps and Cargoes, usands Canitted.	Lives Lost
British .				•	£18,900	2,090
French .			•		2,100	250
German .					8,400	400
Russian .					1,500	200
Austrian					800	110
Italian .					2,050	250
Spanish .					1,200	150
Dutch .					1,200	150
United State	:8				9,400	1,100
Various.	•	•			6,300	700
	T	tal			£46,850	5,400

The total value of shipping and merchandise sent over the sea annually is almost 1400 millions sterling, and the loss is about 3½ per cent., or less than 1 per cent. per voyage.

# Y

**YACHTS.**—The increase of yachting in Great Britain in 30 years has been as follows:—

Year.		Clubs.	Yachts.	Year.		Clubs.	Yachta,
1853		18	1,046	1873		40	2,805
1863		18	1,348	1883		55	4,030

France has 9370 yachts, averaging 3 tons, and £61 in value: of the whole number only 103 are steamers.

### YACHTS-YARN.

### A .- Log of the "Sunbeam."

Month.		Miles.		Between			
Honth.	Steam.	Sail.	Total.	Latitude.	Longitude.		
July 1876 . August . September . October . November . December . Jan. 1877 . February .	672 569 711 1,753 632 752 664 985	1,967 2,635 1,011 806 4,169 2,123 3,852 1,013	4,801 2,875 4,516	24 S.—41 ,, 54 ,, —32 ,, 32 ,, —15 ,, 18 ,, —21 N. 16 N.—33 ,,	4 W.— 25 W. 18 "— 43 " 43 "— 60 " 60 "— 77 " 73 "—146 " 146 "—157 " 157 "—137 E. 137 E.—116 "		
March April May	2,070 3,262 2,395	1,251	3,321 3,813 3,329	22 ", — 2 ",	116 " — 81 " 81 " — 33 " 33 " — 10 W.		
Total	14,465	20,312	34,777	•••	•••		

The "Sunbeam" had 43 souls aboard, including the Brassey family: she was 157 feet long, 27 beam, 531 tons, 70 horse-power, steamed 8 to 10 knots, and consumed 4 tons of coal daily.

Mr. Lambert's yacht "Wanderer" also circumnavigated the globe in 23 months, 1880-82. She was larger than the "Sunbeam," and carried 63 souls: her log summed up 48,490 miles between steam and sail, but she was only 280 days actually at sea.

# YARN.

# A .- BRITISH YARN EXPORTED.

				Millio	on Lbs.	Value,	Lbs., Yarn	
Yes	ır.		Cotton.	Woollen.	n. Linen Totand Jute.		Thousands Omitted.	Exported per Inhab.
1821	•	_	22			22	£2,306	1.1
1831			64	2	1	67	4,270	2.8
1841			119	14	18	141	8,362	5.2
1851			144	14	19	177	9.071	6.3
1861			178	28	28	234	14,468	8.1
1871			194	44	50	298	23,641	9.5
1881			255	80	86	821	17,698	9.2

487

# B.—PRICES OF YARN, PER LB. (PENCE).

				•	•	•	
Year.		Woollen.	Linen.		Cotton. 13	Woollen. 80	Linen. 14
1831	22	26	19	1901	13	au	7.5
1841	14	29	12	1871	19	34	15
1851	12	25	12	1881	18	26	14

# C.—Importers of Yarn (All Kinds).

						Illion Lbs.	Lbs. per Inhab.
France .		•				24	07
Germany						70	1-6
Russia .						82	0.4
Austria .						88	0.9
Italy .			-			21	0.7
Spain .				-		14	0-8
Holland .		·	-	-	•	20	5-0
China .	-	-	-	•		21	0.1
Various .	•	-	•	•	·	162	•••
	•	•	•	•	•		
						897	

## The exporters are—

Great Britain Belgium	France Switzerland .			lim Lbs. 20 15
reigium	97 Million Lbs.	•	•	

# ZINC.

# A .- Annual Production (Tons).

	Ore.	Motal.	Yie'd, per Cent.
Great Britain	57,000	15,947	<sup>-</sup> 28
Prussia	650,000	102,000	16
Belgium .	250,000	45,000	18
Sweden .	24,000	4,000	16
Russia, &c	50,000	8,000	16
Total .	1,031,000	174,947	17

# B.—ZINC INDUSTRY OF GREAT BRITAIN.

		Tons.							
Year.	Produc- tion.	Imported.	Total.	Exported.	Home Use.	Value, per Ton.			
1831	700	3.800	4,500	3,100	1,400	£14			
1851	8,900	18,600	22,500	4,500	18,000	21			
1871	4,960	20,930	25,890	8,060	17,830	18			
1881	15,950	46,100	62,050	10,700	51,350	15			



# APPENDIX.

# AGE.—The ratios of the following nations stand thus:—

Years.	United Kingdom (1881).	United States (1880).	Denmark (1870).	Norway (1870).	England and Wales (1881).	Scotland (1681).
Under 5 . 5 to 20 . 21 to 40 . 41 to 60 . Over 60 .	13·1 33·1 29·2 16·9 77	13·7 34·2 31·0 15·5 5·6	12·5 29·7 31·0 18·4 8·4	13·5 29·9 31·0 16·6 9·0	13·6 32·6 29·7 16·9 7·2	13·7 83·1 29·0 16·5 7·7
	100.0	100.0	100.0	100 0	100.0	100.0

AGRICULTURE.—The largest area under tillage in the United Kingdom was in 1871, since which date there has been a decline of 2,300,000 acres, say 14 per cent., viz.:—

	Acres, 000's Omitted.				Acre	s, 000's Om	itted.
Years. 1868 .	Corn Crops. 11,660	Green Crops. 5,153	Total. 16,813	Years. 1877 .	Corn Crops. 11,103	Green Crops. 5,164	Total. 16,267
1871 . 1874 .	11,833 11,365	5,505 5,140	17,338 16,505	1881 . 1884 .	10,655 10,113	5,022 4,894	15,677 15,007

Besides the ordinary green crops, flax and hops are included above, but not clover.

The agricultural products of the United Kingdom in 1883

The agricultural products of the United Kingdom in 1883 were:—

		Quantity.	Value.
Wheat, bushels .	•	70,300,000	£21,100,000
Barley ,, .		81,800,000	18,400,000
Oats ,,		132,200,000	23,800,000
Various		27,900,000	3,450,000
Straw, tons .		10,400,000	11,600,000
Potatoes		4,440,000	14,600,000
Hay and sundries		· ·	43,200,000
m. 4.1			0100 150 000
Total	•		£136,150,000

The product of meat, dairy, hides, wool, &c., was 127 millions £, forming with the above a total of 263 millions.

The value of Irish crops in 1885 was £31,724,000, or 3½ times the rental of land. In Great Britain the crops average 4½ times the rent of land. The rental of Ireland ought not to exceed 7 millions £ per annum.

The United States crops for 1885 showed-

						Millions.			
Wheat Maize	:	:	•			Acres, 34 73	Bushels. 357 1,936		
Oats	•	•	•	•	•	23	629		
To	tal					130	2,922		

As regards agriculture in relation to food-supply for mankind, it is found that the product of 100 acres in various forms is as follows, per annum :-

Sheep-farming .			5,000 lbs. meat	will	suppor		persons.
Wheat	•	•	2,500 bushels	"	**	250	**
Potatoes	•	•	300 tons	**	,.	520	,,
Bananas and orange	8.		320,000 bushels	,,	,,	995	77

### ASSES AND MULES.

TIN TETU 7	 	uv.		
			Asses.	Mules.
France			389 <b>,000</b>	274,000
Italy .			674,000	294,000
Austria			70,000	24,000

In the United States there are 1,914,000 mules and asses, not distinguished.

AUCTIO	NC	MA.	RT.—Sales	οf	real	estate	in	Lor	ido <b>n</b>	show	:
1882			£6,164,000	-1	188	34.		£	5,977	,000	
1883	•	•	5,148,000	- [	188	35.			4,454	,000	

BANKS.—The National Banks of Spain and Italy showed as follows in December 1885 :-

	Millio	ns £.		Millions £.			
Capital . Reserve . Issue .	B. of Spain. 6 0 0 6 18 3	B. of Italy. 6:0 1:4 22:1	Deposits Discounts Cash .	B. of Spain. 11.6 33.0 6.2	B. of Italy, 20:6 18:4 10:5		

The rates of interest in December 1885 in open market were :-

							•			-
Paris	2·7 3·0 3·1	Vienna Madrid Rome .	•	•	:	4 0 4 0 4 2	Stockholm Lisbon Petersburg	:	:	4·5 6·0 6·0

			B. of England.	B. of France.
Issue			£24,513,000	£116,720,000
Bullion			20,115,000	89,700,000

BICYCLE.—Mr. Prince, in the United States, made 890 miles in 6 days.

### BLIND.

(1.) The ratio in the United Kingdom is said to be :-

		inhabitants				of age.
	770		,,			"
	200			60	,,	,,
TID	50	,,	,,	80	"	,,,

(2.) Blind in the United States:-

•				Day 100 000	Ratio	of Sexes.
Year.			Number.	Per 100,000 Inhab.	Male.	Female.
1850 .		•	9,790	42	55	45
1860 .			12,660	41	58	42
1870 .			20,320	53	56	44
<b>1880</b> .			48,930	97	55	45

**BLOOD.**—The heart beats 74 times a minute, sending each time 10 lbs. of blood through the veins and arteries: the human system of an adult averages 28 lbs. of blood.

**BOOKS.**—Mr. Quaritch paid £1600 for a Bible dated 1462 at the Duke of Marlborough's sale in 1881.

BULLION.—The current of precious metals in 1881, 1882, and 1883 has been in the aggregate as follows:—

		Millions	£, Gold.	Millions £, Silver.		
Great Britain France . United States Australia . India, &c	:	 1mported. 32 25 31 7 48	Exported. 34 24 9 19 57	26 24 6  35	Exported. 25 19 11 36	
		143	143	91	91	

The imports and exports of specie (United Kingdom) in 15 years show thus:—

				Millions	E, Gold.	Millions £, Bilver.			
1871-7 1876-8 1881-8	0.	:	:	102 83 56	Exported. 89 82 57	Imported. 63 65 44	Exported. 55 68 44		
	Tot	al.		241	228	172	167		

CANAL, SUEZ.—The nominal capital and sums actually realised were-

Year, 1860 1868 1871 1880	:	:	Issue. £9,360,000 6,667,000 600,000 240,000	At 100 60 80 67	Realised. £9,380,000 4,000,000 480,000 160,000
To	ial		£16,867,000	83	£14,000,000

The capital consists of 8 millions sterling in original shares, and £8,867,000 in debentures: the dividends on the former have been about 15 per cent. per annum in recent years.

CATTLE.—The numbers in 1870 and 1884 show thus, thousands omitted :--

	- •						
	Co	Ws.	Ho	7904,	Sheep.		
U. Kingdom.	1870. 9,235	1884. 10,423	1870. 2,631	1884. 2,878	1870. 32,787	1884. 29,377	
France	12,227	11,576	3,027	2,845	28,160	22,303	
Germany Russia	15,390 22,770	15,785 27,323	3,271 16,160	3,522 17,590	26,508 48,132	19,185 51,823	
Austria	12,702	13,184	3,545	3,283	20,103	13,092	
Italy U. States	3,490 23,820	4,783 42,547	478 7.145	660 11,170	6,180 28,478	8,596 50,627	
•						50,1127	
Total	99,634	125,621	36,257	41,948	191,148	195,001	

Increase, 26 per cent in horned cattle, 16 per cent in horses, and 2 per cent in sheep; population rose from 285 to 335 millions, say 18 per cent. If we count 10 sheep as 1 cow, the cattle for meat-supply rose 22 per cent., but in Europe the increase was only 5 per cent., while population increased 12 per cent.

The United States Agricultural Report for 1883 was as

follows :-

0110.						
			Nun	iber, Thousands Omitted.	Millions \$.	# per Head, Value.
Milch c	ows			13,125	397	30
Other	••			28,046	611	22
Horses				10.838	765	70
Mules				1.871	149	80
Sheep				49,237	124	23
Pigs '				43,270	292	$\frac{21}{7}$

The export of cattle from Ireland in 1885 was 29,000 horses, 640,000 cows, 641,000 sheep, and 398,000 pigs.

CENTENARIANS.—According to Dr. Farr's tables, of one million male and female persons born, 77 males and 147 females will reach 100 years, but the newer tables of Dr. Ogle give only 41 males and 112 females.

GOAL.—In Great Britain the average earnings of colliers in 1884 were 49 pence a day, being exactly the same as in 1870, but the output of coal per miner rose in the same interval from 230 to 318 tons per annum; that is, the wages paid for extracting a ton of coal were 65 pence in 1870 and 46 pence in 1884—a saving of 30 per cent.

APPENDIX.

COMMERCE.—The trade of the United Kingdom in 1885 was as follows:—

					Amount, Millions &.					
						Imports from.	Exports to.	Total.	Ratio.	
United Sta	tes					83	32	115	17.7	
India .				•		31	31	62	9.7	
France .	•					35	24	59	9.2	
Australia						26	28	54	8.3	
Germany						23	28	51	7.9	
Holland						25	16	41	6.4	
Belgium						15	15	30	4.7	
Russia .						18	7	25	3.9	
Canada			•			11	10	21	3.3	
Other cour	itries	•	•	•		107	80	187	28.9	
	Tot	al				374	271	645	100.0	

The principal articles of trade in 1880 and 1885 were:-

	Imports,	Millions &.		Exports, l	Millions £.
Grain Cotton Manufactures Meat Wool Sugar Sundries	1880. . 70 . 43 . 34 . 27 . 27 . 23 . 187	1885. 53 36 53 24 25 19 164	Cotton goods Woollens Other textiles Hardware Coal Sundries	1880. . 76 . 21 . 12 . 49 . 8 . 120	1885. 56 19 29 46 11 110 

Colonial goods are included both in imports and exports.

CONSOLS.—Highest and lowest quotations since 1801:—

		Highest.				I	owest.
1817		84	1803				50
1824		97	1821				69
1838		95	1831				75
1852		102	1847	·			79
1867		96	1866		·		84
1883		103	1874		·		91

COTTON .- The United States cotton crop was as follows :-

Year.		Bales.	Year.		Bales.
1882		5,436,000	1884		5,714,000
1883		6,992,000	1885		5,669,000

A bale weighs 485 lbs. See Fibre.

DEBT	.—The	Natio	nal l	Debt	in	Ma	rch :	1885	was	as follov	*s:-
	Unfun	able an			:	:	•		40,18: 86,11: 14,03: 6,45	5,000	
	Assets	Total	:	:	:	:	:		46,78 35, <b>92</b>	0,000 <b>4,000</b>	
		Net deb	ot .					£7	10,850	6,000	
to 122 m The U exactly 3	illions Inited 00 mil	£, hav States lions £	ing i deb	incre t, I	ease Dece	d 25 mbe	mil r 3	llion 1, 1	s sin 885,	in June ce 1882. amount ows:—	
									٠ ٦	Killions &	
		n war		•	•	•	•	•	•	93	
		and Mo			rs	•	•	•	•	41	
		-Germa			•	•	•	•	•	316	
	Roads	and bri	dges .			•	•	•	•	188	
	Railwa		•						•	41	
	Sundr	ies	•			•	•	•	•	234	
		Total d	ebt			•		•	•	912	
The lo	cal del	ot of F	rance	a has	g qu	adrı	iple	d in	20 y	ears :-	
Year. 1862 1882		£13,7 £13,3 85,3	aris. '02,00 '00,00	0		£13,	mun 880,0 290,0	00		Total. £27,382,00 115,590,00	
The R	ussian	nation	al de	bt h	as l	een	cau	sed a	s fol	lows :—	
									3	lillions £	
	Reden	ntion o	f serf			_				85	
		ys and				•	•	Ť	•	156	
		an war.			-	•	:	•	•	142	
	Turkis		•	•	•	•	•	•	•	133	
			•	•	•	•	•	•	•		
	Sundr	les	•	•	•	•	•	•	•	37	
		Total de	ebt .							553	

DRINK.—Official returns for liquor consumed in United States:—

V.	ear.		Mil	llion Gallo	ns.	Gallons per Inhabitant.			
• •			Spirits.	Wine.	Beer.	Spirits.	Wine.	Beer.	
1840 .	•	-	43		23	2:5	0.3	1.4	
1850.			52	6	37	2.2	0.3	16	
1860.			90	11	101	2.9	0.4	3-2	
1870.			80	12	204	2.1	0.3	5.3	
1880.			64	28	413	1.2	0.6	8.3	
1884.			83	21	588	1.5	0.5	10-2	



## APPENDIX.

The consumption in the United Kingdom in 1885 was as follows:—

					lions of illons.	Gallons per Inhabitant.
Beer		•			990	27.5
Spirits	•	•	•	•	36	1.0
Wine			•		14	0.4

The total reduced to alcohol amounts to 66½ million gallons, or 1.82 per inhabitant, representing a value of 55 shillings. The consumption in the three kingdoms was:—

#### Gallons per Inhabitant.

		Beer.	Spirits.	Equiv. in Alcohol.
England		32	0.83	1.90
Scotland		12	1.93	160
Ireland		16	1.00	1.27

Deaths resulting directly or indirectly from drink are said to exceed 60,000 yearly, or 10 per cent. of the total in the United Kingdom.

EDUCATION.—The primary schools of the United Kingdom show as follows:—

Year. 1854 1864	:	:	8chools, 3,825 14,263	Average of Pupils. 461,400 1,333,200	Expenditure. £326,000 996,000	Per Pupil, Shillings. 14 15
1874	:	•	22,928	2,385,800	1,958,000	17
1884	•		29,724	4,214,300	4,546,000	. 22

The degree of instruction in the French army has been :—

Year. 1830			Could 54 per		Year. 1860				Could Read. 74 per cent.
1840 1850	:	•	61 68	,,	1875 1881	:	:	:	79 ` ,, 82   ,,

**EGGS.**—In 1884-85 Great Britain imported every week 20 millions, and the United States 5 millions: the consumption in Great Britain is 85 yearly per inhabitant, of which 57 were native and 28 imported.

ELECTORS.—The elections of 1885 showed as follows, thousands omitted:—

Electors, County Borough University	:	•	England. 2,533 1,848 14	Ireland. 641 106 4	Scotland. 323 233 14	U. Kingdom. 3,497 2,187 32
Total			4,393	751	570	5,716

The different parties were distributed according to voters thus (000's omitted):-

	England.	Ireland.	Scotland.	County.	Borough.	University.
Liberal Conservative Nationalist .	1,843 1,663 10	28 115 367	286 159 3	1,293 1,128 323	874 794 44	3 15 0
Total	3,516	510	448	2,744	1,712	18

In the above table all unopposed elections are put down as if half the registered constituency had voted for the party of the person elected. The ratio of voters to population and registered electors shows as follows :-

Voters per 100

Voters per 100

England Scotland Ireland		: :	Inhabitanta 13 . 12 . 10	Electors. 80 79 67
The elections re	su]	ted as foll	OW8 :	
Liberal. Conservative Nationalist.	:	Members. 334 250 86	Voters. 2,157,000 1,937,000 380,000	Ratio of Members. 1 to 6,450 votes. 1 to 7.850 ,, 1 to 4,420 ,,
		670	4.474.000	1 to 6.710 votes.

# ELECTRIC SCIENCE.

(1.) The Magasin du Louvre at Paris finds the cost of lighting to be—Gas, 100; Edison light, 75; Jablochkoff, 55.
(2.) The first electric railway in the United Kingdom was opened from Belfast to Giants' Causeway in September 1883.

(3.) The first electric screw-boat made a trip on the Thames at Greenwich, July 1883; speed 9 miles an hour.

#### EMIGRATION .- The returns for 1885 show :-Destination.

English Scotch Irish	:	:	:	U. States. 73,900 13,300 50,700	Canada. 14,900 2,300 2,700	Australia. 28,800 4,800 6,400	Various. 9,300 1,100 400	Total. 126,900 21,500 60,200
United	l Ki	ngdor	n.	137,900	19,900	40,000	10,800	208,600
Ther	e w	as a d	lec	line of 34	,000 as c	ompared v	vith previo	us year.

### FIBRE.—The production in 1883 was as follows:-

Cotton Wool . Flax, jute,	&c.	:	•	•	•	Million lbs. 4,778 1,716 2,540
						0.024

9,034

#### APPENDIX.

497

FINANCES.—The British revenue in 1884 and 1885 was (000's omitted):—

Customs . Excise .	•	•			1884. £19,950 26,527	1885. £20,139
Stamps .	:	•	:	:	20,527 11,700	25,695 11,710
Taxes .	:	:	:	•	13,178	15,510
Post-office	•				9,595	9,805
Sundries .	•	•	•	•	4,560	4,719
1	Cotal				£85,510	£87,578

FIREMEN.—There are 286,000 men in the various fire-brigades in France.

PISHERY.—The Scotch fisheries have multiplied 14-fold since the time of the Napoleon wars, viz. :—

1805-10 . . Cured 90,000 barrels fish per annum. 1881-83 . . , 1,250,000 ,, ,, ,, ,,

The ordinary value is 40 shillings per barrel.

# LIVING, COST OF.

## EXPENDITURE OF PARIS IN 1826.

EA	FED	DIL	J.K.E.	OB.	IAB	112	IN IC	)ZU.
Food . Taxes . Rent .	•	:	:	:	£ 14 5	8.	itant. d. 0 0 3	Amount, & (000's Omitted). 12,350 4,760 4,000
Clothing . Furniture Fuel and light	•	:	:	:	2 2 2	16 14 14	5 6 0	2,470 2,400 2,380
Servants. Cabs and hora Instruction Washing.	es	:	:	:	1 1 1	16 15 11 8	8 6 3 9	1,610 1,540 1,870 1, <b>2</b> 60
Sundries .	To	ial			£40	8	9	£35,430
The chief items	of i	food	were					
Bread, lbs. Wine, gallons Meat, lbs. Dairy Sugar, lbs. Sundries	:	•	:		•	165  26		2 12 6 2 12 6 3 2 0 3 19 0 1 0 6 1 0 0 2 8 0

Total . . .

LONDON.—In 1885 London had 555,000 houses, with 4,120,000 inhabitants, covering an area of 117 square miles, or 75,000 acres, that is, 56 persons per acre. There were 400,000 foot-passengers and 80,000 vehicles passing daily over the bridges, and 370,000 passengers in the Underground Railway. There were 1830 miles of streets, and 2300 miles of sewers, the latter ranging from 1 ft. to 12 ft. diameter. The sewage reservoirs (12 miles below London) discharged 150 million gallons daily into the Thames at ebb-tide. Water-supply was 140 million gallons daily, or 34 per inhabitant, for which the companies charged £1,500,000, or 14d. (1.60) per ton. Gas consumption amounted to 20 milliards of cubic feet, at 3 shillings per 1000 ft., say £3,000,000 per annum, consuming 2 million tons coal and conveyed by 2500 miles of pipes, some 4 ft. in diameter. Fire-brigade had 58 engines, 124 escapes, 580 firemen, costing £100,000 per annum, and using 17 million gallons water. Police, 13,000 men, or 1 in 316; cabs, 11,000; and 2000 busses. Parks, 42, covering 4490 acres. Markets, 14, covering 15 acres.

MATCHES.—Sweden and Norway export 20,000 tons of wooden matches yearly, being nearly one-third of the quantity consumed in Europe per annum. The tax on matches in France averages fourpence per inhabitant.

MEAT.—Full-grown animals in England average as follows:—

		Meat.	Fat. &c.	Hide.	Total.
Cattle		680	356	84	1,120 lbs.
Sheep		91	43	18	152 ,,

Cows give from 70 to 160 lbs. tallow. The Liebig factory at Fray Bentos makes 1 lb. beef extract from 34 lbs. meat.

METEOROLOGY.—In addition to table on p. 312, we have the following readings of temperature, in Fahrenheit:—

Mean Anno Melville Islan		Extremes Zero.		Extremes below Zero.		
Yakutsk .	12	London .	. 98	London 10		
Hudson Bay	18	Moscow .	. 90	Moscow 45		
Nertschinsk	25	Sydney .	. 102	Chicago 30		
Algiers .	69	Cairo .	. 119	Montreal . 42		
Hong-Kong	75	Bagdad .	. 120	Melville Island 52		
Ferozepore	85	Murzouk.	. 132	Werchojonsk . 80		

The greatest cold ever known in the British Islands was at Blackadder, Berwick, namely, 23 below zero, on 4th December 1879. The most severe winters in England have been as follows:—

1813	1829	1844	1860	1870	1879
1819	1838	1855	1864	1878	1881



#### APPENDIX.

In that of 1838, during the fire at the Royal Exchange, the water pumped on the building formed icicles of grand dimensions.

The earliest snow recorded near London was 26th September
1885. The great snowstorm of January 1881 has seldom been
surpassed, the snow in parts of Sussex lying 10 feet deep.

The average sunstine throughout the year is 2½ hours daily at

London, 4 at Kew, 5 at Hastings.

METEORS.—Greenwich Observatory counted 3000 between 6 and 11 p.m. on 27th November 1885. At intervals, in the first hour, there were 40 a minute.

MULES.—See Asses, p. 490.

NATURAL HISTORY.—The table at p. 325 represents the "dark ages" of science. Insects alone exceed 100,000.

## OCCUPATIONS (1881).

England and Wales (000's Omitted).

				Male.	Female.	Total.	Ratio.		
Professional				451	196	647	5.7		
Domestic				259	1,545	1,804	16.3		
Commercial				961	<b>19</b>	980	8.7		
Agricultural				1.318	65	1.383	12.4		
Industrial	•	•	•	4,795	1,578	6,373	56.9		
				7.784	3,403	11.187	100.0		

The ratio of persons in the various occupations in the United Kingdom were :-

•	England.	Scotland.	Ireland.	United Kingdom.	Hands (000's Omitted)
Professional	. 5.7	6.0	8.4	6.3	941
Domestic .	. 16.3	11.0	17.8	16.0	2,396
Commercial	. 8.7	8.2	3.0	7.8	1,180
Agricultural	. 12.4	16.8	41.8	17.6	2,651
Industrial .	. 56.9	<b>58·0</b>	29.0	52.4	7,967
	100.0	100.0	100.0	100.0	15,135

The above does not include vagrants, undefined occupations, school-children, inmates of asylums, &c. According to Professor Levi, there were in 1884 in the United Kingdom 12,200,000 wage-earners, as follows, among the working-classes only :-

					omitted).	Earn Millio	ings, ns £.	Per Head,		
Professional Domestic Commercial Agricultural Industrial	:	:	:	1884. 300 2,400 900 1,900 6,700	1867. 300 1,700 700 2,700 5,600	1884. 16 86 45 67 307	1867. 10 59 39 84 226	1881. 53 36 50 35 46	1867. 33 35 56 31 40	
Total	l	•	•	12,200	11,000	521	418	43	38	

He classifies the workers and earners according to age as follows:—

		Earners, 000's Omitted.		Earn Millio	ings, ons £.	Per Head.		
		1884.	1867.	1884.	1867.	1884	1867.	
Males under 20		1,650	1,200	29	23	£18	£19	
,, 20 to 65		6,530	5,900	363	293	56	50	
Females under 20		1,300	1,300	30	27	23	20	
" 20 to 65	•	2,720	2,600	99	75	37	29	
Total .		12,200	11,000	521	418	43	38	

According to the three kingdoms thus:-

			Workers.	Earnings, Millions &	& per Head.
England			8,600,000	401	47
Scotland		•	1,500,000	62	41
Ireland		•	1,800,000	42	23
Undefined			300,000	16	53
Tot	al		12,200,000	521	43

Professor Levi estimates the earnings of the whole population thus, in millions  $\pounds$ :—

Upper class . Middle class . Working class	England 477 . 98 . 401	Scotland. 59 14 62	Ireland. 36 8 42	U. Kingdom. 572 120 505
Total .	. 976	135	86	1,197

See my own tables, p. 28; also Professor Levi's, p. 465.

ORGAN.—Riga, 66 feet high, 7000 pipes, 4-horse power. Haarlem, 38 feet high, 8000 pipes.

PAPER-MONEY.—The value of 100 francs paper in Italy reduced to gold was—

Year.	Αv	erage,	Lowest.	Year.	1	verage.	Lowest.	Year.	A	verage.	Lowest.
1866		93	83	1871		95	93	1876		92	91
1867		93	88	1872		92	87	1877		91	88
1868		91	87	1873		88	85	1878		91	90
1869		96	94	1874		89	85	1879		90	87
1870		96	89	1875		92	90	1880		91	88

PARIS.—Population 2,240,000, 80,000 houses, 30 square miles, say 116 persons per acre. Streets 580 miles, sewers 440 miles, tramways 80 miles. Area of streets 2800 acres or 13 million square yards, of 40 feet average width; scavenging £330,000 per annum. Rainfall 22 inches. Water-supply 82 million

gallons, or 36 per inhabitant. Sewers cost £4,000,000, vary from 5 to 18 feet diameter. Streets lit by 44,000 gas-lamps, which consume 77 million cubic feet of gas, cost £130,000 per annum, or 40d. per 1000 feet. Busses and tramcars 1150, cabs 8000, steamboats 500, police 6000.

PARLIAMENT.—In the new House of Commons 111 members were educated at Oxford, 82 at Cambridge, 72 at Eton, 46 at Harrow, and 27 at Rugby. The changes made in 1885 in the distribution of members in the House of Commons are seen as follows:—

		Cou	County.		Borough.		ersity.	Total.	
		1884.	1885.	1884.	1885.	1884.	1885.	1884.	1885.
Rngland . Wales Scotland . Ireland .	:	172 15 32 64	234 19 39 85	282 15 26 37	226 11 31 16	5  2 2	5  2 2	459 30 60 103	465 30 72 103
U. Kingdom	١.	283	377	360	284	9	9	652	670

#### PAUPERS.—The returns for 1884 were—

			Number.	Expendi- ture.	No. to 1000 Inhabitants.	Cost, Pence per Inhabitant
England .			784,000	£8,400,000	29	74
Scotland			91,000	870,000	23	53
Ireland .		•	107,000	1,345,000	21	64
	_					
United King	dom	•	982,000	10,615,000	27	70

PLAGUE.—The cholera of 1884 in Italy attacked 27,030 persons, of whom 14,299 died; that of 1885 at Palermo carried off 2959 persons, of 5535 cases. That of Spain in 1884 was fatal to 110,000, out of about 200,000 cases.

**POPULATION.**—The German Empire in 1880 comprised (000's omitted)—

Prussia .				•		27,251
Bavaria .	•	•	•	•	•	5,272
Saxony .		•	•	•	•	2,970
Wurtemburg		•	•		•	1,970
Duchies, &c.	•	•	•	•	•	7,731
						45,194

In Bavaria and most of the small states the ratio was under 200 persons, but in Saxony it reached 510 per square mile.

RAILWAYS.—Traffic returns of United States, taking for unit 100 miles, showed as follows:—

Year.	Year.		Million assengers.	Million Tons.	Fare per Passenger.	Fare per Ton.
1882			75	392	8 centa. 2 51	# cents. 1 24
1883 1884	:	:	85 88	441 447	2 42 2 36	1 24 1 12

Passenger fares fell 6, goods tariff 10 per cent.

British railway companies pay £1400 a day for indemnities, 60 per cent. of which is for damage to persons, 40 per cent. to goods. Passenger locomotives earn 53 pence, those for merchandise 74 pence, per mile run. The life of a locomotive is 15 years. State railways in Europe cost 60 per cent. in working expenses, those of companies 53 per cent.

New York Elevated Railway took 2200 tons of iron per mile,

New York Elevated Railway took 2200 tons of iron per mile, and cost £44 per yard, against £500 for the London Metropolitan.

RAINFALL.—The wettest place in England is Seathwaite, 145 inches; and in the world Cherrapungi, in South-Western Assam, where the average for 15 years is 493 inches, reaching in 1861 up to 905 inches.

RIVERS.—The Amazon falls 2 feet, the Elbe 10 feet, and the Parana (from Corrientes to Buenos Ayres) 22 feet per 100 miles.

SHIPPING.—The new vessels built in the United King.lom, and the tonuage lost or broken up since 1880, have been as follows:—

			ilt, Tons.	Broken	Up, Tons.	Increase, Tons.			
Year.	•	Steam.	Sail.	Steam.	Sail.	Nominal.	Carrying- Power.		
1880.		329,000	83,000	117,000	297,000		846,000		
1881.		439,000	123,000	158,000	282,000	122,000	1.248,000		
1882.		519,000	196,000	188,000	259,000	268,000	1,590,000		
1883.		583,000	169,000	190,000	275,000	287,000	1,860,000		
1884 .	•	373,000	177,000	157,000	225,000	168,000	1,032,000		
		2,243,000	748,000	810,000	1,338,000	845,000	6,576,000		

Carrying-power allows for steamers at the rate of five times the nominal tonnage (see note at foot of p. 406). The merchant navy of the United Kingdom rose from 18 million tons in 1881 to 24 millions carrying-power in 1884, an increase of 33 per cent.

in 3 years. In 1885 the increase was equivalent to 500,000 tons carrying-power, or 100,000 tons of steamers. The cost of building steamers per ton has varied thus—

1870		£14	1874		£19	1880		£12
1872		17	1877		13	1885		10

The carrying-power of British shipping is exactly equal to that of all other flags in the world collectively.

STEAM-POWER.—In 1885 the world possessed 35 million horse-power, viz. :—

		million morse-power.				
		United Kingdom.	Continent.	United States,	Total.	
Fixed .		3.1	4.1	3.3	10.2	
'Railway		3.2	9.7	6.2	19.4	
Steamboat		3.1	1.0	1.1	5.2	
Total		9.7	14.8	10.6	35.1	

TYPHUS.—This item seems to include also typhoid fevers, pp. 147 and 456.

TRAVELLERS.—The number arriving at Nice and vicinity in 1883 was 3,030,000, against 2,012,000 in 1878.

TRAMWAYS.—Those of United Kingdom cost £14,900 a mile in construction, carry 310 million persons yearly, earn £3300 per mile, and produce 4½ per cent. on capital.

UNIVERSITIES.—Those of the United States have 65,000 students, of whom 52 per cent. for arts, 20 per cent. medicine, 15 per cent. science, 8 per cent. theology, and 5 per cent. law.

WEIGHTS AND MEASURES.—A hide of land in olden days of England was about 120 acres. A mancus was 2 oz. in weight.

WINE.—The French vintage and wine trade showed thus:—

			Amions of Gamons,			
Year.	Acres of Vines.	Wine Product.	Wine Imported.	Wine Exported.		
1875		5,550,000	1,210	6	82	
1880		5,017,000	414	172	54	
1882		5,001,000	415	175	62	
1885	•	4,970,000	642	183	56	

### The vintage of the United States averages :-

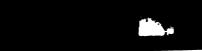
California . Ohio Other States	:	Acres. 82,000 10,000 140,000	Million Gallons. 14 2 8	Velue. \$4,050,000 1,630,000 7,750,000
		182,000	24	13 430 000

# WRECKS.—The loss of life in British vessels has been :—

Year.	:	Crewa.	Passengers.	Total.	Yearly Average.
1871-75		9,715	2,037	11,752	2,350
1876-80		7,965	772	8,737	1,747
1881-83		7,876	382	7,758	2,566
		25,056	3,191	28,247	2,173

The loss of life in 1884 was 2245, being below the average of ten years ago, although the nominal registered tonnage has increased 30 per cent, the number of hands being, however, unchanged. The death-rate of seamen from drowning is just 1 per cent, per annum. See p. 155.

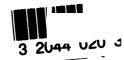
A.M.D.G.





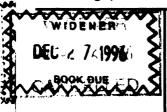






THE BORROWER WILL BE CHARGED AN OVERDUE FEE IF THIS BOOK IS NOT RETURNED TO THE LIBRARY ON OR BEFORE THE LAST DATE STAMPED BELOW. NON-RECEIPT OF OVERDUE NOTICES DOES NOT EXEMPT THE BORROWER FROM OVERDUE FEES.

Harvard College Widener Library Cambridge, MA 02138 (617) 495-2413



DENE

UG 31 2000

